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ARSENO-BENZOL SUBSTITUTES FOR GERMAN SALVARSAN.

By **E. H. Molesworth, M.B., Ch.M. (Syd.),**

Honorary Physician for Diseases of the Skin, and Syphilis Clinic, Royal Prince Alfred Hospital, Sydney; Honorary Dermatologist, St. Vincent's Hospital, Sydney.

When the war brought about a great scarcity of salvarsan, so that two, three, five, and even seven pounds were asked and given for a single tube of 0.6 gramme of the drug, it was not merely a very eloquent testimonial to the great value of the arseno-benzol group of drugs in the treatment of syphilis, but a veritable disaster in such an institution as the Syphilis Clinic at the Royal Prince Alfred Hospital, where an average of more than 250 cases of syphilis is treated each week.

Hence it was with much relief that we greeted the appearance of substitutes, while we were not less agreeably surprised to find these substitutes of equal value to the originals.

The opportunity of testing these preparations adequately and of comparing them with one another and with the original salvarsan was not wasted, while the large numbers of injections (averaging between 50 and 70 a week) given in all stages of the disease, and to all sorts and conditions of patients, obviates the error inseparable from conclusions drawn from observation of a few cases at wide intervals of time and place.

Having been given an opportunity of reading Dr. Crevelli's translation of a paper read by M. Dalimier and Levy-Fränckel before *L'Académie des Sciences de Paris*, before its publication, I thought the results of our experience at Prince Alfred would give support to the appeal to substitute drugs of allied manufacture for German preparations after the war. In addition to this, I am also desirous of warning medical men that German salvarsan is now worth only its normal pre-war price, since I find that some speculators, who have refused to sell their stock, even at the immense profits involved in the prices I have quoted, are now trying to unload on unsuspecting practitioners at prices amounting to £4 or £5 a dose. I was offered the stuff at £5, but, being in possession of the facts, laughed at the man. Since then, however, two of three of my colleagues have telephoned me to ask me should they buy any for me, or whether the price was reasonable under the existing circumstances. Hence I know the attempt is still being made to unload at an almost fraudulent price an article worth about one-tenth of what the vendors are asking for it.

The first of the substitutes for salvarsan to reach Sydney, a little over a year ago, was galyl, a French preparation, apparently an approximation to neo-salvarsan. Its exact chemical composition, however, is not given, at least on the slip of directions for use. The method of preparation is simple solution in sterile distilled water (concentrated in 10 c.cm. or dilute in 100 c.cm.), and injection into a vein. The reaction is very mild, as with neo-salvarsan, and, as in the case of neo-salvarsan, the therapeutic result is good, but less remarkable than with salvarsan. Similarly, its influence in rendering negative the Wassermann reaction is less rapid than that of salvarsan, but about equivalent to that of neo-salvarsan. It seems a very useful drug, very easily prepared, very mild in its reaction, but less efficient than the original salvarsan. A word of caution necessary in this connexion, is that, though easy of preparation, and mild in its reaction, its administration is not without risks, since one patient, a young and, apart from his syphilis an apparently healthy man, collapsed half-an-hour and died twelve hours after an injection of 0.4 gramme of galyl. A post-mortem examination and a coroner's inquest failed to elucidate the cause of death, and it is only fair to add that seven men, who were injected with galyl from the same batch of tubes on the same evening, suffered no ill-effects, while several hundred patients treated with galyl before and since have given no cause for anxiety.

The next drug to make its appearance was arseno-benzol, another French preparation. Its chemical composition is di-chlorhydrate of di-oxy di-amido arseno-benzol, *i.e.*, the same as salvarsan. Its preparation, its acidity, its reaction, its therapeutic results, its influence upon the Wassermann reaction, all seem, in my experience of four or five hundred injections of the drug, to be identical with those of salvarsan, as would be expected from the published identity of chemical composition.

The third preparation in order of appearance is the English kharsivan, also described as identical with salvarsan. In the course of about a hundred injections of this drug, I have found it to be identical to salvarsan and arseno-benzol in its effects, so that all that I have said with respect to arseno-benzol holds good for kharsivan.

Hitherto, there has not been any claim to superiority to salvarsan on behalf of any of the above-mentioned preparations, which have been more or less frankly claimed to be reproductions of Ehrlich's "606" or "912." But quite recently a preparation named luargol, with the Pasteur Institute stamp upon it, has been put on the market in France. By the kindness of Dr. Crevelli, who forwarded me six tubes for trial, I have been able to compare its effects with those of arseno-benzol and kharsivan. In a primary case, 0.3 gramme of the drug was given, and the lesion healed in four days and showed no trace of infiltration after a week (the sore was the diameter of a sixpenny bit and was densely infiltrated). In an early secondary case no lesion was detected a fortnight after the adminstration of 0.05, 0.1, and 0.25 gramme doses of the preparation. One dose of 0.2 gramme was given in another secondary case and very remarkable improvement was noted,

while a girl of fifteen, suffering from congenital syphilis, with very marked interstitial keratitis, who received 0.15 gramme, has not yet, at the time of writing, five days after the injection, shown any marked improvement. The last quoted case is a hard test, since this lesion, owing to the lack of blood supply, is notoriously intractable, even to salvarsan. I intend to give her, after the lapse of a week, a dose of 0.4 kharsivan, and to note if there is any more rapid progress.

Luargol is only soluble in sodium hydrate solution, of which 20 c.cm. is supplied with the drug. It is recommended by the makers to inject in this concentration with a syringe. The first patient I injected thus got thrombosis extending half way up the arm, into the brachial veins, without temperature or illness beyond local swelling and tenderness. But the trouble might have been grave. I therefore gave the subsequent doses diluted to 100 c.cm., with an instillation apparatus, which allows slow and even flow, and had no further trouble.

The chemical difference between luargol and salvarsan is the addition of a silver and antimony molecule to the arseno-benzol combination. These additions, and especially that of the antimony, give ground for hope that the results will be an improvement on "606," since antimony is known to have a very beneficial effect on other diseases of animal parasitic origin, such as kala-azar, etc.

A general survey of the use and effect of these various drugs has led me to the following conclusions:—

(1) That, as far as I can ascertain by inquiry and clinical observation, arseno-benzol, kharsivan and salvarsan are identical in composition, and, at any rate, in therapeutic effect.

(2) That they are all slightly but noticeably more efficient than galyl and neo-salvarsan, which can also be grouped together as far as their therapeutic effect is concerned.

(3) That luargol promises to be better than any of them, but that, owing to limited experience with this drug, I cannot yet express more than the hope that we may have in our hands a drug of even greater value than arseno-benzol and kharsivan.

(4) I cannot see any reason why we should go back after the war to the German drug. As far as I and my department at Royal Prince Alfred Hospital are concerned, we shall certainly be quite content, if supplied with arseno-benzol, kharsivan, and luargol, to do without salvarsan for ever.

DANYSZ' "102" (LUARGOL) IN THE TREATMENT OF MALIGNANT OR ACUTE SYPHILIS.[1]

By **Drs. Dalimier and Levy-Fränckel,**
Paris.

The treatment of syphilis, in both its contagious and acute forms, must be adapted at present to the special conditions of war. We must endeavour to render the patient non-infectious within the shortest space of time possible, or to cure the lesion which incapacitates him with the minimum of risk.

In order to attain this double object we have employed Danysz' arseno-antimony-silver compound, known as "102," or luargol. We were asked to test the efficacy of this remedy by *Médecin-Inspecteur* General Nimier (Director-General of Medical Services) and have employed it in 22 cases of syphilis.

We do not propose to deal with the lesions occurring in the normal evolution of the disease. The use of "102" in this connexion has been the subject of an important preliminary communication by Drs. Alexandre Renault, L'Fournier and L. Guénot, and we have nothing to add, except that our observations confirm their conclusion fully. On the other hand, we sought typical or particularly obstinate cases of syphilis, and this explains the relatively few cases on which we have made our observations.

Of the 22 cases selected, those with ordinary syphilitic manifestations have been exeluded, and the number on which our report is based has consequently been reduced to 14.

(1) The Primary Stage.—There were three extensive phagedænic chancres; one was the size of the palm of the hand; cicatrization occurred in 15 days. The dose in each case was one gramme.

A gangrenous chancre, with œdema of the penis and ulcerating black edges, emitting a fœtid odour, perforated the prepuce. The urine issued from a sloughing wound. Cicatrization followed the exhibition of 0.6 gramme of "102" in one week. The total dose employed in this case was 1.20 grammes.

(2) The Secondary Stage.—Syphilitic ulceration of the penis and thighs, uninfluenced by "grey oil." healed in 12 days with 0.40 gramme of the drug.

(3) The Tertiary Period.—Two cases of precocious malignant syphilis: (*i.*) an ulcerated gumma in the region of the sterno-mastoid, as large as a mandarin, appearing nine months after the chancre, healed within 11 days. The total dose was 0.90 gramme. (*ii.*) A syphilitic orchitis developing 12 months after the chancre. Enlargement of the testicle literally disappeared under our eyes within the 10 days during which the treatment was applied. When seen two months later the patient was perfectly well. (*iii.*) Extensive tertiary syphilitic rupia, covering the whole thorax. This case had previously been treated without success with three injections with neo-salvarsan (0.90 gramme) and two injections of "grey oil" (stomatitis). There had been some improvement after the fourth injection of 0.70 gramme of "102." As a matter of fact, it was necessary to give 15 injections, bringing the total amount injected to 2.9 grammes in two months, before cicatrization of this particularly extensive lesion was achieved. (*iv.*) Ozæna. Two cases were completely cured by five injections.

(4) Visceral Syphilis.—(*i.*) A classical case of dilatation of the aortic orifice. The X-ray examination (Dr. Degouy) was definite. As the patient did not stand mercury well, "102" was given with care, the first dose being 0.05 gramme. This was well tolerated. After the second hypodermic injection of 0.1 gramme the functional disturbances diminished. After the fifth injection there was marked amelioration of the condition; the sense of oppression was lessened, the patient slept better, and the

[1] Presented by Dr. Laveran to the *Académie des Sciences* on March 20, 1916.

two radial pulses became equal. After a total amount of 1.2 grammes had been given in 10 injections, spread over five weeks, the functional symptoms had completely disappeared. On auscultation it was found that the murmurs, which had previously been harsh, had become soft. A second skiagram was taken 37 days after the first radiographic examination. The pictures were taken both in the antero-lateral and in the antero-posterior diameters, and showed that the cardio-aortic shadow, which had previously overlapped the vertebral column and the outer end of the clavicle to a considerable extent, had retracted, leaving a space of over a centimetre between its edge and the vertebral column. It did not reach as high up as the sterno-clavicular articulation. The outline of the cardio-aortic shadow had been diminished by at least one centimetre. (*ii.*) Syphilitic myelitis. Incomplete Brown-Séquard's syndrome, with paresis, hypoæsthesia, exaggerated reflexes, right ankle clonos and a positive Babinski's reflex on both sides. There were very marked bladder symptoms, including purulent cystitis, with retention of urine, necessitating catheterization twice daily. There was also incontinence of fæces. The sphincter disturbances improved after the second injection of "102." After the third injection the patient could stand up, and the sphincters became normal. After the fourth injection the patient was able to walk about the room. At this juncture jaundice set in, which necessitated the suspension of the treatment. The total amount given was 0.55 gramme.

(5) Non-syphilitic Lesions.—We have used "102" in non-syphilitic psoriasis. We have obtained a complete disappearance of the eruption in five out of eight cases. These results will be dealt with fully in a subsequent communication.

We wish to point out that efficient doses, *i.e.*, those which suffice to effect the first definite signs of improvement of the lesions, are very small; it has not been necessary to use more than 0.4 gramme in order to arrest the gangrenous process grafted on the chancre of the prepuce referred to above; while phagedænic chancres had been healed with less than 0.8 gramme. When we consider the results we obtained during the course of several years of the use of arseno-benzol, employing it in doses of from 0.4 to 0.75 gramme, it appears to us that the preparation of arseno-antimony-silver is more active and powerful, even when used in doses of half the size than the former.

We have not been able to study the influence of "102" on the general evolution of syphilis, and we cannot give an opinion as to the possibility of a sterilization of the organism from its use. This is, however, not the most important problem. What is more urgent is a rapid clearing up of lesions. From a military point of view, "102" is, without a doubt, the best drug. It has no serious disadvantages. After an experience of 150 injections, we have not met with even a mild reaction on a single occasion. Even the slight reactions recorded by Drs. Renault, Fournier and Guénot as having taken place after the first injection were not noted. We presume that they must have employed too concentrated a solution. We have been struck by the harmlessness of the injections; the patients had frequently taken a meal beforehand and another immediately after it, without experiencing the slightest malaise. Others came from a distance, travelling some hours by train or on horseback, and left immediately after they had been given the injection, without experiencing any inconvenience. These facts form additional evidence in support of our contention that "102" acts more favourably than arseno-benzol does.

In hospital practice "102" has the advantage of being extremely stable. A solution prepared in the morning for all the cases to be treated remains unchanged for several hours.

In regard to the contra-indications of "102," there are very few indeed. It has been used in the case of a patient with aortic disease, and also in the case of myelitis. We have employed "102" twice in patients whose urine contained considerable quantities of albumin. In these two cases the albuminuria disappeared after two or three injections. Care should perhaps be exercised in regard to the liver, since our myelitis patient had a slight amount of jaundice for a time. We thought it advisable to interrupt the injections. This patient, however, had purulent cystitis, and some disturbance of the digestive organs, which was certainly responsible, in part at least, for the jaundice. We can therefore conclude that there are very few cases indeed in which the first few injections of 0.05 to 0.1 gramme of "102" should not be carried out, and that the contra-indications to its use are practically negligible.

It appears to us that "102" is a substance which has been introduced into therapeutics, and above all to military therapeutics, as a powerful weapon against the treponema of greater activity than any drug up to the present time. Its use is practically unattended by danger.

PYORRHŒA ALVEOLARIS.[1]

By **A. J. Wright, L.D.S., R.C.S. (Ed.), D.M.D. (Harvard), D.D.S. (Nat. Med. Univ.),**
Perth.

What is it?

Pyorrhœa is inflammation of the tissues surrounding the teeth. Sometimes the inflammation is slight, and then the name is not appropriate. Sometimes the inflammation is great, with loss of tissue and flow of pus. And then the name is appropriate, for pyorrhœa means "pus flow." But whether little or great, the inflammatory process is the same. Under given conditions, it follows a given course, just as it would elsewhere in the body. The beginning forecasts the end, unless proper remedies are applied. Names more accurate than pyorrhœa have been given it, and should stick; but somehow they do not. We shall herein use the common term, pyorrhœa.

It is described by Tomes as "the gradual wasting of the alveolar processes, accompanied by the corresponding recedence of the gums. It keeps pace with the general changes which attend the advance towards old age. The necks of the teeth become ex-

[1] Read at a Meeting of the Western Australian Branch of the British Medical Association on April 19, 1916.

posed, the gums continue to sink lower and lower, until the whole of the roots are uncovered and the teeth at last fall out. Then the alveolar ridges waste, until, in some instances, the upper jaw becomes nearly flat, and the lower is reduced to a mere bar of bone, almost flat-topped."

Were this only met with in advanced age, the dentist might well look upon it as a thing altogether beyond remedy, but, unfortunately, it frequently attacks those in middle life, and I have, on a few occasions, seen it in children. I will describe a case. A child, nine years old, was brought in by its mother to see me. Her teeth were so covered with tartar that it was almost impossible to see which were permanent or which were temporary. I asked the mother if the child ever had rheumatic fever, and she told me she had it twelve months before. In each case where I have seen it in children, they have all had rheumatic fever.

In some adults we find the gums so absorbed that the whole of a root or all the roots of molars are completely exposed, yet there is not much flow of pus. We are, however, more concerned with its causes and treatment.

According to Flagg, there is a systemic predisposition, combined with decided induration of tooth tissue or other local irritant; but, to my mind, this does not go far enough to explain its cause. There are certainly some who are predisposed to this disease from heredity. Some observers are of opinion that it is contracted by kissing, or by the use of the same cup or glass. I think I would be justified in saying that in seven out of every ten cases presented, either the father or the mother had pyorrhœa in some form or other. But this is only one cause. Another is the irregularity of teeth, for we often notice that it first appears where teeth are overlapped and that it spreads from this situation. Another cause is want of cleaning, allowing particles of food to lodge between the gums. The food decomposes and causes an irritant to the soft tissue. It has been stated by Dr. Carr, a specialist in pyorrhœa, that this makes a good feeding and breeding ground for the streptococcus, which can be found in large quantities in the pus which oozes from the gums. Another cause is fillings badly finished at the free edge of the gums; these constitute an irritant to the soft tissue. But I am inclined to think that the greatest cause is tartar forming at the necks of teeth; the gums are forced away and the acid is deposited on the peridental membrane, which becomes very inflamed, and makes an excellent breeding-ground for the bacteria chiefly connected with pyorrhœa. When this has been going on for a considerable time it effects the interstitial process between the teeth, and we get absorption of the process. Teeth which do not meet in mastication are more liable to be affected first. In nearly all cases of pyorrhœa the gum at the necks of the teeth becomes thickened and loses its attachment to the teeth; pockets are formed, and at this stage we get more or less pus and a very unpleasant odour. This has been called by some interstitial gingivitis. Tomes says that many cases arise from scurvy or mercurial salivation. Sir John Bland Sutton has stated that he found pyorrhœa in monkeys. Pyorrhœa usually occurs in the mouths of persons of a gouty, rheumatic, or scrofulous tendency.

We are learning that pyorrhœa, and not caries of the teeth, is the most formidable disease we have to treat and are expected to cure. We can treat and fill decayed teeth with success, but the percentage of cures in pyorrhœa is small.

In classifying the ætiology of the disease, autointoxication, as in the rheumatic or gouty diathesis, must be mentioned first. I may say that pyorrhœa is an unknown disease among savage races.

According to Flagg, the cause is to be sought in systemic predisposition, combined with decided induration of tooth tissue or other local irritant (salivary calculus, caries or necrosis of process edge, gum pouches).

Treatment.

First we must remove all tartar and calcareous deposits from around the necks of the teeth, as far down the roots as possible. Next we must polish their surfaces. Dr. Carr's treatment is to wash out the sockets and fill pockets with dental bismuth paste, which consists of bismuth subnitrate 30%, petrolatum 60%, paraffin 5% and white wax 5%.

Dr. Begues's method was to make a saturated solution of iodide of potash and iodine crystals, in equal parts, and a saturated aqueous solution of sulphate of zinc. Equal parts of each saturated solution are mixed together and the product applied to the sensitive surfaces. The operation of scaling is then proceeded with. Peroxide of hydrogen has been used with success after all deposits are removed. Emetin hydrochloride was thought to be a positive cure, but it has only been proved to be effective in some cases.

Another treatment is that of electricity applied by means of the cataphoresis. This method was stated, when first introduced about 1904, to be a specific, but has been abandoned by the majority of dentists, who had given this costly method a trial.

Dr. C. C. Bass, Professor of Experimental Medicine and Instructor in the Laboratories of Clinical Medicine at Tulane Medical College, at New Orleans, startled the world by his announcement at the beginning of 1915 that he had found the organism that was the definite cause of pyorrhœa, *viz.*, *Endamœba buccalis*. He stated that endamœba was the specific cause of this disease, and that emetin hydrochloride was its specific. We found that good results were obtainable with this drug in some cases, but it is not what we had hoped of it. With this treatment, as with all others, all deposits of tartar must be removed.

J. W. Needles gives the following description: Pyorrhœa—(1) Pyorrhœa alveolaris is, in reality, a chronic alveolar osteomyelitis; it should be known and treated as such.

(2) Mechanical causes are responsible for starting the disease, while systemic diseases and local infection are responsible for keeping it up.

(3) Pyorrhœa is a specific disease, though its ætiology cannot be ascribed to any one single organism.

(4) A great many rheumatic diseases so-called and a great many gastro-intestinal conditions are directly related to pyorrhœa. The importance of oral sepsis to constitutional disease is just beginning to be appreciated.

(5) The treatment of pyorrhœa, especially with autogenous vaccines, with proper attention to diet, relieves or cures these systemic conditions, as well as cures the pyorrhœa.

The Causes of Alveolar Pyorrhœa.

By N. N. Znamensky, M.D., Professor of Moscow University.

Alveolar pyorrhœa, which has been developed in consequence of local causes, such as the collection of tartar deposit, particles of food, and so on, may be treated by local means only. But if the disease is of constitutional character, then a general treatment, in addition, must be applied. The importance of general treatment becomes specially clear, if I repeat my views regarding the preparation of favourable soil for the development of alveolar pyorrhœa, as follows:—

The walls of the sockets are attacked by osteoporosis and are replaced by granular tissue, owing to the want of nourishment. This malnutrition arises either in consequence of general anæmia or of arterial obstruction. The latter may arise either from arterio-sclerosis, from old age, hard physical work, gout, diabetes mellitus, general obesity, chronic lead-poisoning, chronic nicotine poisoning, chronic alcoholism, or extreme emotion, or in consequence of the inflammations observed in tuberculosis, syphilis, and other infectious diseases. The object of general treatment is to restore the regular nourishment of all tissues, and in particular that of the walls of the sockets. Every case of alveolar pyorrhœa must be specially diagnosed to find the predisposing cause. Therefore, general treatment varies; in some cases anæmia is treated; in some cases diseases of metabolic disturbances, in other cases syphilis or tuberculosis, and so on. It is not the duty of the dental surgeon to undertake general treatment. The character of the general predisposing cause should only be defined by him, and he should then send the patient to a specialist. The principal duty of the dentist is local treatment after the removal of tartar deposit, which is confined to:

(1) The removal of the sockets softened by osteoporosis, as far as the healthy bone. This removal is best accomplished by the scraping out of the socket.

(2) After this operation it is necessary to carry out daily disinfection of the newly-wounded surface, all the time, until the cicatrix is formed. Afterwards, this cicatrix becomes contracted and strengthens the tooth. The period of strengthening a tooth after an operation takes about six to eight weeks, according to the depth to which the osteoporosis has gone.

(3) After this it is necessary to maintain regular nourishment of the walls of the sockets, by a sufficient flow of arterial blood to them. This purpose is well attained by chewing solid food, and Caucasian or Siberian gum resin. Chewing this every day, from two to five minutes in the morning and evening, gives quite sufficient exercise to the teeth, gums, and muscles of the jaw. This local treatment is of great importance in those cases where, in carrying out general treatment, the return of the complaint is constantly present.

The chewing of gum gradually lessens the propensity to return of the ailment. My clinical experience has shown me that slight cases, beginning with alveolar pyorrhœa, were cured without operation merely by chewing solid food and Caucasian gum resin. The blue colour of the gums, their swelling and hæmorrhage and the suppuration disappeared little by little in the course of several months. The gums became red and firm. The teeth were completely strengthened. All the foregoing shows that the complete absence of general treatment of the predisposing cause need not suggest the thought that local treatment will be sufficient, because the predisposing causes remain, and, consequently, in future, one can expect the disease to return.

(4) The fourth principal point which it is necessary to follow is the removal of food particles from between the teeth after every meal. Food which remains there causes inflammation of the gum, the development of pockets, and the recurrence of alveolar pyorrhœa. Therefore, the duty of a physician is to instruct patients to employ a toothpick, to rinse out the mouth after every meal with the aid of a large syringe, to remove those small particles of food which were neither removed by rinsing the mouth nor by a toothpick. Any kind of light disinfecting fluids may be used for irrigation, for instance, 2% solution of boric acid. Every two or three months the patients who have been operated upon should be seen, in order that the dentist may control the proper care of their teeth.

ROENTGENOLOGY AND RADIUM THERAPY ABROAD.

By **Herschel Harris, M.B., Ch.M.,**

Honorary Consulting Radiographer, Sydney Hospital; Honorary Radiographer, Royal Prince Alfred Hospital; Honorary Radiographer, Royal Alexandra Hospital for Children.

During the period of over two years since I left Australia, many opportunities were availed of to investigate the methods adopted by leading radiographers and radium-therapeutists in various parts of the world.

Arriving first at Paris, chief attention was directed towards three hospitals, *viz.*, Saint Antoine, Saint Louis and Laennec. The work performed at them all was of a very high standard, and the departments were well equipped. Many students were always present, and the cases were demonstrated to them in detail.

Much attention was paid to opaque-meal work, and, at one hospital especially, to chest cases, where artificial pneumothorax was frequently produced in cases of phthisis. At one, Professor Bernhard, the eminent pathologist and physician, would always ex-

amine his patients before and after the operation, and watch their progress. Some he showed who had been operated upon two years previously, and the results were apparently very good.

Dr. Maingau was especially dexterous in his handling of gastro-intestinal cases, and, with his special spoon, constructed of wood and somewhat "S"-shaped, was frequently able to demonstrate gastric and duodenal ulcers and carcinomatous conditions. It was surprising the amount of pressure he could exert with this spoon, and also the clear definition which would be obtained thereby.

Much deep therapy was being carried out, especially in connexion with uterine fibroids. Sometimes, in one therapeutic department, as many as six patients in separate cubicles would be irradiated at one time.

The applications in cases of skin diseases, too, were very numerous and in many cases X-rays were employed in conjunction with other methods, such as radium and carbonic snow. The main object was always to cure the patient, and not to vaunt any one process in particular.

Sabouraud and Noiré were visited, and, as usual, they were treating many cases of ringworm. Their original method was still adhered to, and the sister in charge told me that it took the whole morning to do one case. As each patch was irradiated it would be covered with sheet lead, and, eventually, the intermediate patches were rayed. This process often involved a dozen applications.

It was interesting to meet some of the pioneer Röntgenologists and also somewhat sad to see their injuries. Professor Béclère, in spite of his injuries, was doing excellent work. It was astonishing in many of the branch hospitals to note the lack of proper protection that was adopted, both amongst the operators and assistants.

The apparatus employed was either manufactured by Gault or by Gaiffe, and was of a very high standard. The tubes were chiefly by Pilon, and an air-cooled one by this maker was just being introduced, and appeared to have great possibilities. Both coils and high tension transformers were employed, mainly the latter. As compressed air is laid on in Paris just the same as is a water supply, many uses are found for it with radiographers, and it is frequently used to dry plates with, being as rapid and better than spirit.

Dr. Degrais, chief of the Radium Institute, was visited on many occasions. His clinic always contained many interesting cases, including nævi, cutaneous growths, etc. During my month's stay in Paris, I was able to watch the progress of these cases, and also to see many others that had been treated in the past, and some of the results were very excellent, especially in selected cases. In his laboratory several nurses handled the radium applicators, adjusting the necessary filters and covers. Dr. Wickham, who was formerly chief of the Institute, had died some months before my arrival. It was found here, as at the London Institute, that from frequent handling of the radium applicators the finger-tips became hardened and cracked, and no way to avoid it could be suggested.

The radium factory at Armet-de-Lisle was visited, and great additions were then being made to it. At this period the demand for radium applicators was very great, so much so, that orders from this firm, and also that of Henri Farjas, took six months to complete.

It may be mentioned that great care should be taken to examine varnish applicators, as they so often blister and crack. This happened to several that were forwarded to Australia, and they had to be returned and re-made. Although the cost is extra, it is always advisable to obtain a certificate from Madame Curie for each applicator.

Radium filtration has been greatly modified within the last few years, and frequently, in addition to using a dozen layers of gauze, a half-dozen or more layers of paper are also used. By this means, reaction is frequently avoided, and, consequently, much irritation.

Early this year I had an opportunity of visiting London before returning to Australia. Dr. Jordan allowed me to attend his rooms daily and see all his private work, which comprises mainly bismuth meals and chest examinations. His apparatus is simple, and so are his methods, and his results are certainly satisfactory. In many cases subsequent operations, performed by Sir Arbuthnott Lane, were witnessed.

At Guy's Hospital, Dr. Shenton and his assistant, Dr. Eccles, were kept constantly employed. They examined most of their cases by means of the fluorescent screen, and it was surprising to note the dexterity they achieved by this method. Dr. Shenton is very ingenious, and is constantly devising new apparatus. His compressor hand-screen brings out very minute detail, and his recent bullet-finding apparatus is certainly the best I have seen. Quite recently he installed a radiographic department at a military hospital at Hampstead, where he was doing much useful work.

Wishing to obtain a knowledge of deep therapy, a visit was paid to Dr. Martindale, a lady doctor at Brighton. She had specially studied this method under Gauss, of Freiburg, and had a specially-trained nurse to carry out the treatment. She had many fibroids under treatment, and, by using the special lead filters, was able to map out a considerable number of areas on the abdomen and back for the entrance of the rays. Dr. Martindale claimed many excellent results in fibroid cases when properly selected. She explained to me that menstruation did not contraindicate an X-ray sitting, and she was treating most successfully many cases that a few years previously would have been operated upon.

There is no doubt that, judging by the very satisfactory results obtained by deep Röntgen-therapy, it must be given a prominent place in the treatment of certain abdominal conditions, and especially in uterine fibromata and carcinomata.

Some really excellent results were seen in England, Paris and America, and the conclusions of this

method of treatment, which are generally accepted, and are quoted by Dr. Pfahler, of Philadelphia, are:

(1) Röntgen-therapy must be looked upon as a very efficient adjunct to the gynæcologist's armamentarium, and while I believe that the rays should be applied by the Röntgenologist, he should at the same time work hand in hand with the gynæcologist.

(2) Deep Röntgen-therapy stops the hæmorrhage associated with uterine fibroids. This is followed by a gradual disappearance of the tumour. This atrophic process may extend over several years and continue long after the cessation of treatment.

(3) The treatment of metropathic hæmorrhage is always uniformly successful.

(4) Uterine hæmorrhage occurring at the menopause, when not malignant, will usually respond very quickly. There should be an increase of weight and an improvement in the blood condition following treatment, and, when this does not occur, suspicion of malignancy should be aroused.

(5) Some good results can be obtained in inoperable carcinoma. The deep Röntgen-therapy should be specially recommended as post-operative treatment in all cases.

At the London Hospital, the radiographic department was visited on several occasions, and much valuable information was gained from Dr. Gilbert Scott, who was in charge. He had many assistants and a great abundance of material to draw upon. The therapeutic department is under the control of Dr. Sequeira, the eminent dermatologist. In my opinion, he has the best clinic in London for Röntgen-therapy, and the Finsen light department, which is also under his control, is kept constantly employed on the innumerable cases of lupus, which are so common in London.

St. Bartholomew's Hospital is well equipped, and the work is carried on under the supervision of Drs. Walsham, Finzi, Cummerbatch and Robertson. Like other hospitals, St. Bartholomew's has been brought up to date and installed with the latest radiographic and therapeutic apparatus.

It was specially interesting to visit Dr. Finzi at his rooms. His therapeutic work is entirely carried out by means of a Coolidge tube, and he demonstrated to me that it was possible to obtain a full pastille dose filtered through 3 mm. of aluminium in thirty seconds.

At the London Ophthalmic Hospital, Dr. Higham Cooper and his assistants were daily examining eyes for foreign bodies, and McKenzie Davidson's method was entirely employed. They were so adept with this method that the whole process occupied about ten minutes only, and the results were always proved correct to within one millimetre.

It was a special privilege to meet Sir James McKenzie Davidson in person. For some years he has given up private practice, and devotes his leisure hours to experimenting with Röntgen rays. His home is always open to those who are desirous of gaining knowledge in his special method of localization, and I feel deeply indebted to him for much useful information which he imparted to me. Lately he has devised an improved localizer for foreign bodies in the eye, and also a special table for radiographic work generally.

It is somewhat amusing to see the number of localizers that are on the market since the advent of the war. As it was the fashion for every gynæcologist to have his own speculum, so it is now considered the correct thing for every radiographer to have his own localizer. The principle of them all is identical, and the unwary will often become confused as to which is really the best. The stereoscopic method is frequently employed when available, but not everybody possesses stereoscopic vision, and, then again, after viewing the stereoscopic image, it is necessary for the surgeon to carry that stereoscopic image in his mind during the whole course of the operation. In my opinion, localization should always be left to the radiographer. This will generally be found to be most satisfactory in the long run.

In London, much attention is devoted to dental radiography, and the results obtained are very excellent. Special aluminium holders are utilized for this work, and special dental films are also manufactured by the various photographic firms.

Early this year a strong ultra-violet radiation, described by Simpson, was attracting considerable attention, and several installations were made in civil and military hospitals, and some good results were recorded. At the London and Saint Bartholomew's Hospitals, Drs. Sequeira and Cummerbatch were exhaustively testing the apparatus, and, at a special meeting of the Electro-Therapeutic Society, they read papers on their results. Their conclusions proved that the radiations had much the same therapeutic value as other ultra-violet radiations, but with the apparatus in question they were easier to apply and stronger. Excellent results were quoted in cases of indolent ulcers resulting from wounds, especially cases of acne, pruritus, etc. The secret of these ultra-violet radiations appears to be that the electrodes employed are composed of tungsten.

At the London Radium Institute, Dr. Lynham, the chief assistant, showed me all over the building, and allowed me to see him treating the numerous patients who attended there daily. They have a large supply of radium on hand, and they manufacture their applicators in their own laboratory. Naturally, a great many of the cases sent are inoperable and somewhat hopeless. In suitable cases, however, some very satisfactory results are obtained. The applicators made in the laboratory are quite the best I have seen and are undoubtedly superior to those made in France. My indebtedness is due to the director of the laboratory for many useful hints, especially for those relating to the preservation and remaking of varnish applicators.

Radium water and emanations are much utilized at the Institute, and large quantities are sent out daily to various practitioners for their own private use. It may be mentioned that in Paris, Dr. Degrais told me that they were not using the water or the emanations to any extent. The statistics pub-

lished by the Radium Institute appear each year, and they deal conservatively with all the cases treated.

Regarding X-ray apparatus generally, it is very difficult to procure any now in London, as the War Office is keeping most of the firms hard at work supplying their necessary wants. Before the war, most of the apparatus was imported from abroad, and the supplies naturally ran out very quickly. Now, the various firms are manufacturing their own goods, and, within a very short time, it is safe to predict that the English-made apparatus will be as good as, if not better than, any of the imported. This applies to English-made tubes and also intensifying screens.

Few places in the world offer such opportunities for studying X-ray work as America. Both the medical profession and the public appear to appreciate fully the many advantages of a Röntgen examination, and this department always occupies a most important place in all the large institutions. America possesses many eminent Röntgenologists, whose writings and results have made them famous throughout the world. Expense appears to be of no object there. The hospitals are all perfectly equipped, as is also the case in their own private offices. There are always assistants provided in large numbers, and, generally, the Röntgen specialist will devote most of his time to viewing plates and interpreting results.

Fortunately, I arrived at New York just when a post-graduate class in Röntgenology was being conducted, and, as an invitation to attend was given me, many opportunities were availed of to see the work. Dr. Gregory Cole was particularly liberal, and, besides attending many interesting lectures delivered by him on gastro-intestinal work by means of his special method of serial radiography, many hundreds of his beautiful plates were examined on various occasions. Dr. Cole would generally have sixty plates made of one case alone, with the patient in various positions, and this frequently included several stereoscopic views. He usually remained in his examination room, and, seated in an easy chair, examined the numerous plates placed in front of a large view box, and in due time pronounced judgement on the whole series. He showed me many plates of biliary calculi, and by his special method Dr. Cole claims to be able to detect them nearly always when they are present.

In his opaque-meal work he appears to deserve most credit for his thorough examination of the "cap" and for the defects that so often occur in cases of duodenal ulcers. Few men make such an elaborate examination of their cases, and, then again, not every patient could afford to pay for it. In hospital, the expense would be quite out of the question. Dr. Cole never screens his patients, and depends entirely for his results on his serial radiographs.

A great variety of work was witnessed at Mount Sinai Hospital, under the control of Dr. Jacques, and also at Saint Luke's, where Dr. de Wald is in charge. Shortly after my arrival a joint meeting of the Röntgen Societies of America and New York was held at the Waldorf-Astoria Hotel, preceded by a dinner. I was invited to be present, and a most enjoyable and profitable evening was spent. Several papers were read, and discussions following, and the meeting did not disperse before two o'clock in the morning. Numerous invitations were on that occasion extended to me to see the work of many of the eminent men who were present from other parts of the State, and practically all my spare time was booked that evening.

At the Vanderbilt Clinic, Dr. Remer was kept very busy doing therapeutic work. Here, besides having screen cases of all varieties to treat, they get a large number of ringworm cases, which Dr. Remer treats much after the fashion of Adamson, mapping out the scalp into five equidistant areas. At the Manhattan Nose, Ear and Throat Clinic, Dr. Law specialized mainly in sinus and head cases, and I certainly think that his results in this particular line were the best I saw.

Dr. Caldwell, of New York, who was one of the pioneers of Röntgenology, and consequently has suffered thereby, certainly stands in a class by himself. Having been an electrical engineer in his early days, this has enabled him to devise the most ingenious apparatus. His special table combines every desirable movement for his work electrically. In his examination room he has a special tank examination view box. Here, at a moment's notice, he is able to demonstrate at least twenty plates at a time. He appears to devote more care to his details than most of the other men, and, as a result, his plates are almost as perfect as one could possibly wish.

A visit to the New York post-graduate clinic, under the control of Dr. Hirsch, proved a surprise, and the remainder of my spare time in New York was spent there. His system is very thorough. He has numerous assistants under him, who carry out their duties like clockwork. During one day at least a hundred cases would pass through the clinic, and when Dr. Hirsch appeared later the results would be already grouped in the examination room for him to interpret.

At Boston, several days were most profitably spent with Dr. Arial George, who has just published an excellent work on gastro-intestinal disease. As well as allowing me to see his private work, all his most interesting plates were shown and described to me and some beautiful plates of biliary calculi were also exhibited. Dr. George claims to obtain positive results in a very high percentage of his gall bladder cases when calculi are present.

At the Massachussets Hospital, Dr. Dodd did a large amount of work, assisted by Dr. Holmes Dr. Brown also, of Boston, was most interesting, and his electric table is a worthy rival to that of Dr. Caldwell.

At Philadelphia, Dr. Pfahler was visited, and his time was continuously occupied with a large variety of cases, mainly therapeutic, and he was able to exhibit some remarkable results in cases of deep-therapy, especially in cases of sarcoma and carcinoma, even when bone was involved. At a medical meeting held one night, he exhibited a splendid collection of thoracic radiograms, and showed many

cases of thyroid enlargement, a condition which, of late, has been recognized as fairly common abroad.

Dr. Pfahler showed me many successful cases of uterine fibroids that had been treated by deep-therapy, and also allowed me to witness him operating in several cases of malignant disease by means of electro-thermic coagulation, followed by Röntgen-therapy. He has most deservedly gained a great reputation for his therapeutic results. His radiographic work, too, is excellent, including gall-bladder work, and much of his own apparatus he has personally designed. Dr. Manges, also of that city, did a large amount of radiographic work, and obtained most satisfactory results, and, lastly, several hours were spent with Professor Pancost, at the University of Pennsylvania, proved very profitable.

A special invitation from Dr. Case, of Battle Creek, took me to his "Sanatarium," where I spent several very pleasant days. Here I lived as a vegetarian, and I had nearly five hundred to keep me company. The work carried on was after the style of the Mayo Clinic, of Rochester. However, to me, the most interesting part was to see the opaque-meal of Dr. Case, so well-known throughout the radiographic world. As a routine, the new patients were generally given an opaque-meal, if they had any gastric symptoms whatsoever. Whilst I was there, a duodenal diverticulum was discovered by the rays, and operated upon by Dr. Kellog, assisted by Dr. Case. This case will shortly be reported in the American journals. Dr. Case devoted a large amount of time to gall-bladder examination, and he, too, obtained many excellent results.

Generally speaking, a moderate estimate amongst the workers of America is that positive results are obtained in at least 50% of the cases in which biliary calculi are present.

The *pièce de resistance* was reserved for the end, when Dr. Carman, at the Mayo Clinic, was visited, and the week I spent there was certainly the most profitable of the whole trip. It was estimated that one hundred and twenty-five new patients arrived there daily from all parts of the States, and most of them were pathological. One evening alone, Dr. Carman was able to demonstrate four gastric ulcers, two duodenal ulcers, one case of malignant disease of the œsophagus, and two cases of carcinoma of the stomach. As the operations were performed daily at St. Mary's Hospital, beginning at eight o'clock, we were able to follow up many of the cases, and whilst I was there all the X-ray findings were corroborated. Dr. Carman is the most conservative of all the X-ray men in America, and does not try to break records, but simply to state facts. His methods are always simple, and his results most accurate. For his opaque-meal, he examines the patients in the erect position first of all, and, subsequently, horizontally. In this position he has a series of radiographs taken, which he subsequently examines and compares with the screen examination. For the examination of the large bowel he uses a clysma when necessary. Frequently, during the afternoon and evening, we would have lectures and discussions on X-rays, and these always proved interesting and instructive.

Regarding the apparatus in America, the high-tension transformer is almost universally employed. Numerous machines are on the market, all of which are very satisfactory. As for tubes, there is a great variety to select from, and it can safely be said that the American tubes are equal to the best that Germany ever produced. The Coolidge tube was installed everywhere, and fine results were obtained with it. Great precautions must be taken when using these tubes, as they need very delicate handling, and without due care they easily inflict burns on the patients.

In conclusion, it may be stated that radiology has reached that stage in America that, if not recommended by the practitioner, it is often suggested by the patient or sought independently by him.

Reviews.

MEDICAL AND SURGICAL PRACTICE.

We have received the 1916 number of the "Medical Annual,"[1] a year-book of treatment and practitioner's index. It is divided into four parts: (1) Dictionary of Materia Medica and Therapeutics, (2) The Dictionary of Treatment, (3) Naval and Military Surgery, (4) Miscellaneous. The part dealing with naval and military service is an innovation, being introduced to let medical practitioners know what part medicine and surgery is playing in the great war, and to describe the latest ideas on the treatment of wound infections and injuries incidental to modern warfare. At the same time the advances made in civil practice have not been neglected, and an endeavour has been made to bring concisely before the reader matters of practical and scientific importance that have been reported on during the year 1915. The text is assisted by the introduction of illustrations in the shape of many excellent plates and figures. We can cordially recommend the book to all those practitioners desirous of keeping in touch with the progress of medicine and surgery.

The August number of Dr. Murphy's "Clinics"[2] contains a larger proportion than usual of short articles. The headings are of very diverse character, some being contributions of great interest, though the majority are of small importance. There are two on cases of epithelioma of the lip, which, we think, will excite the severest disapprobation on the part of every other surgeon who has closely studied malignant disease in this region. Dr. Murphy's operation is entirely inadequate. He is satisfied, even in a very bad-looking case, with enucleating "the submaxillary lymph node" at the apex of the submaxillary salivary gland, or removing the apex with the node attached. The first half of the volume is very badly edited, as if the transcription from shorthand notes had been left unrevised by a professional man. Dr. Murphy could never have said some of the things as reported.

Medical Matters in Parliament.

WESTERN AUSTRALIA.

His Excellency the Governor opened the session of the Western Australian Parliament on July 20, 1916. In the course of his speech he made the following references to matters affecting the public health and similar subjects:—

> The Harvey irrigation works were formally opened in June, and are now available for the supply of water

[1] The Medical Annual, 1916 (Thirty-fourth Year). Bristol: John Wright & Sons, Ltd.; Demi 8vo.; illustrated by 53 plates and 94 figures, pp. 919.

[2] The Clinics of John B. Murphy: General Surgery, Vol. II.; 1916. Philadelphia and London: W. B. Saunders Co.; Melbourne: James Little; Crown 8vo., with 620 pp. Price, 35s. per annum.

to the settlers. The reservoir at Harvey is full and overflowing. . . .

Public institutions of a humanitarian character have been extensively established. The Wooroloo sanatorium for consumptives has been in occupation since May, 1915. Open-air pavilions in three divisions have been provided for 200 males and 100 females. The maternity hospital, near Subiaco railway station, was opened at the end of June. Inebriates' homes for both men and women have been opened during the past year. At Whitby, used by the men, a fully-equipped farm is in occupation. The Cottesloe home is occupied by women patients, and was made available in June. It is contemplated to start another home for women convicted of drunkenness by our courts. . . .

TASMANIA.

In his opening speech at the first meeting of the new session of the Tasmanian Parliament, on August 1, 1916, His Excellency the Governor included the following passages:—

. . . A Bill dealing with the control and management of the waters of the State, both for irrigation and power purposes, will be submitted for the consideration of honourable members. My Ministers, realizing the valuable asset we have in our water-supply, and the growing demand for hydro-electric power, are obtaining data as to the power available from the various lakes in the highlands of Tasmania. . . .

The claims made upon the friendly societies as a consequence of the large number of their members killed or incapacitated while on active service has caused a strain upon their resources which was unexpected and not provided for. My Ministers, fully realizing the very important work performed in the community by these societies, have now under consideration proposals designed to render them assistance out of funds at the disposal of the State, and these proposals, when matured, will be submitted for your favourable consideration. . . .

You will be asked to give consideration (in addition to the measures previously mentioned) to Bills dealing with the following subjects: . . . daylight saving, . . . venereal diseases, public health. . . .

INFANTS' FOODS.

The following provisional regulations under the Commerce (Trade Descriptions) Act, 1905, have been introduced. The first amendment came into force on May 24, 1916 while the second and third will become effective on September 1, 1916.

Regulation 3 of the Commerce Regulations 1913 (Statutory Rules, 1913, No. 347), is hereby amended by the addition of the following:—

Infants' food means any food described or sold as an article of food suitable for infants.

Regulation 8 (*b*) is repealed and the following is substituted in its stead:—

8. (*b*) In the case of infants' food. which, when prepared as directed by any statement or statements in the trade description applied thereto—

(1) Does not conform approximately in proportional composition to human milk, in regard to fat, proteids and sugars, or contains starch in excess of 1%, there shall be written the words "This food should not be given to infants under the age of six months, except under medical direction" in bold sans-serif capital letters of not less than six points face measurements. The said words shall be the first words on the label, and no other words shall be written on the same line or lines.

(2) Contains starch in a proportion not exceeding 1%, but otherwise conforms approximately in proportional composition to human milk in regard to fat, proteid and sugars, there shall be written the words "This food should not be given to infants under the age of one month, except under medical direction," in bold sans-serif capital letters of not less than six points face measurement. The said words shall be the first words on the label, and no other words shall be written on the same line or lines.

Regulation 8 (*h*) is amended by adding in the third line, after the words "articles are made," the words "and shall, wherever practicable, be applied by means of indelible stamping."

The following addition is added to the first schedule standards:—Infants' Food.—Infants' food shall not contain any woody fibre, nor any mineral substance which is insoluble in acid, nor any preservative substance.

SUBSIDIZED HOSPITALS AND GOVERNMENT EMPLOYEES.

A meeting of the members of the honorary medical staffs of hospitals receiving subsidy from the New South Wales Government was held at the B.M.A. Building, 30-34 Elizabeth Street, Sydney, on August 10, 1916.

On the motion of Dr. F. Guy Griffiths, Dr. Sinclair Gillies was elected to the chair.

Dr. Sinclair Gillies said that the meeting had been called to consider the effect on the medical profession of a circular which had been issued on July 1, 1916, from the office of the Director-General of Public Health to the Secretaries of the committees of hospitals in receipt of subsidy from the Government. The circular was as follows:—

Treatment and Maintenance in Subsidized Hospitals of Government Employees Injured in the Execution of Their Duty.

Sir,—

I am instructed to inform you that it had been brought under notice of the Director-General of Public Health that on several recent occasions members of the police force injured in the execution of duty, and admitted to subsidized hospitals for treatment, have been charged sums of money in varying amount for what has been termed "Maintenance whilst in Hospital."

The Director-General has drawn the attention of the Minister to the subject, and approval has been given to the issue of notice to all hospitals subsidized from public funds that the following shall be regarded as one of the conditions under which subsidy is granted, in addition to those already in force and enumerated in circular instruction from the Chief Secretary's Office, dated December, 1913 (No. 03/15,293):—

"10. That any employee of the Government of New South Wales who may be injured in the execution of his duty shall, on application, be received and treated, and, if necessary, admitted for further treatment free of all charges for such treatment and maintenance, in any hospital in the State receiving subsidy from the Government."

Your Committee is requested to note that strict observance of this condition will be insisted upon in future.

Your obedient servant,

T. H. NEELY,

Secretary.

The circular had been considered by the Committee of certain hospitals, and the matter had been referred to the members of the honorary medical staff. In order that uniformity of action might be obtained, the meeting of the honorary medical staffs had been called.

Dr. R. Antill Pockley moved:—

With reference to the Chief Secretary's instruction to State subsidized hospitals that any employee of the Government of New South Wales who may be injured in the execution of his duty shall on application be received and treated, and, if necessary, admitted for further treatment and maintenance, in any hospital of the State receiving subsidy from the Government, this meeting of the honorary staffs of these hospitals resolves:—

(1) That while always ready to treat gratuitously all persons whose means are inadequate to pay for such attendance, we reaffirm the principle of refusing, except in cases of urgency, to be exploited by persons who are in a position to pay for our services, and we cannot differentiate between employees of the Government and others.

(2) That the Secretaries of the Medical Boards of the hospitals concerned be instructed to convey the above resolution to the Managing Boards.

Sir Herbert Maitland seconded the motion. A full discussion ensued, in the course of which every aspect of the questions involved was illuminated. The motion was eventually carried *nemine contradicente*.

The Medical Journal of Australia.

SATURDAY, AUGUST 19, 1916.

The Pharmacology of Mercury.

The war has created two problems in connexion with the treatment of syphilis which await solution. In the first place it would seem that the aggregation of large numbers of men in camps, the wearing of the King's uniform, and the altered conditions of life have contributed to an increase in infection. Public opinion has been directed to this important social problem, and mock modesty and comfortable ignorance have been brushed aside, in order that a real attempt may be made to cope with it.

That is the one problem which has been rendered prominent by the occurrence of the war. The other is scarcely less vital, but belongs peculiarly to the medical profession. Up to a few years ago, mercury was regarded as a specific for syphilis. The march of events led to the better recognition of the ætiology and pathology of the disease and the introduction by Ehrlich of certain arsenic compounds as parasiticides peculiarly active toward the pale spirochaete, altered the prospect of definite cure. Since salvarsan was introduced, notwithstanding the actual failure of the *therapia magna sterilisans* it has secured for itself a firm place in the therapy of syphilis. In spite of the fact that its chemical constitution and the mode of preparation are known, difficulty has presented itself in the commercial preparation of pure dioxy-diamido-arseno-benzol. Dr. Molesworth tells us that the French arseno-benzol is pharmacologically identical with savarsan; but there is a difference. The same applies to galyl. Moreover, these substances are scarce and expensive, and we still have the second problem to solve, namely, how to provide an equally valuable product in Australia.

It may be that, pending the solution of the second problem, greater use will have to be made of mercury. In the current issue we publish a full resumé of a paper by Dr. Adams on the preparation of a pharmaceutically ideal mercurial cream. Dr. Adams has overcome the difficulties which presented themselves to him most admirably. His cream contains mercury in a state of extremely fine subdivision. But something more than perfect pharmacy is necessary in therapeutics. The old mercurial creams were dangerous, because the emulsion was imperfect, and one dose might contain globules of considerable size and several times the quantity of the metal than was intended, while other doses might contain little, if any, of the metal. The new cream is composed of particles of small size in a state of equal suspension. Each cubic centimetre injected represents approximately 18 decigrammes of mercury. The rate of absorption depends on the ratio between the surface area of the material to be absorbed and the surface of the absorbing area. When particles intended for absorption are embedded in a waxy or oily medium, the absorption is slowed down. In the case of muscular tissue embracing a depôt of fat and liquid paraffin, both of which are practically resistant to absorption, the metal contained will be absorbed only when mechanical means free small particles from the medium and bring them into intimate contact with the capillaries. The minute size of the globules favours both mechanical removal and ultimate absorption, but this property also favours retention in the depôt. In the laboratory it has been shown that the full pharmacological action of mercury is best obtained by the inhalation of vapour; and that the peritoneal surface lends itself next best to the rapid absorption of finely divided metal. To overcome the defect of having to utilize either muscular or subcutaneous tissue as an absorbing area, various plans have been adopted, such as the use of unstable organic compounds of mercury, which can be emulsified with ease, and mercury in a condition incapable of being absorbed rapidly. By giving a weekly dose of 0.03 gramme of mercury in a depôt, the apparent advantage of "getting the dose in" is fallacious. The actual dose, *viz.*, the amount absorbed from the depôt, will be a variable quantity. Further researches are required for the purpose of finding a medium which will suspend finely divided mercury, or still better an insoluble inorganic compound of mercury, and which is at the same time capable of being itself absorbed rapidly, without producing any toxic symptoms. The value of the preparation must be estimated by the rate of excretion of the mer-

cury, and it must be remembered that Ludwig and Zillner proved conclusively in 1889 that mercury is attracted to the kidneys in the greatest quantities, then to the liver and to the spleen, and lastly to the small and to the large intestines. All other organs and tissues only take up traces of the metal in its passage through the body. The excretion takes place through the urine and fæces, and to a small extent through the saliva and sweat. It is a simple matter to account for practically the whole of the absorbed metal, but the rate of excretion naturally varies according to the chemical condition of the metal when absorbed. It may therefore be claimed that, while Dr. Adams's mercurial cream is a material advance on all other substances employed for intramuscular injection in syphilis, it has defects which human ingenuity should be capable of removing.

CONFLICTING INTERESTS.

The official opening of the Long Bay Ocean Outfall Sewer marks a step in the wrong direction in connexion with the most difficult problem in the sanitation of a great city. This work has been memorialized by the publication of a descriptive pamphlet containing much interesting information, and headed "The Problem Solved." The disposal of sewage can be effected by numerous methods with complete safety to the community and at least a half of a dozen of these methods are suitable for the peculiar conditions in different places. But all the experts on the disposal of sewage agree that the discharge of untreated sewage into the sea is objectionable and wasteful. There are various means of converting sludge into money or power; and the engineers of Manchester, Glasgow, Birmingham, Belfast and London have shown that it is both necessary from a hygienic point of view and economical to render the effluent harmless before its discharge. No sooner had the Department of Public Works of New South Wales perpetrated this sin of carrying the whole of the sewage of Sydney bodily into the sea without any preliminary treatment, than the Minister stated in the Legislative Assembly that he proposed to construct outfall sewers for the north side of the Harbour. He admitted that until this work had been authorized and completed it would not be possible to safeguard the public health of the northern suburbs. The decision in the recent law suit regarding the Folly Point septic tank has made it clear that the methods employed have not sufficed to render the effluent from this work harmless. The failure of a particular system is not necessarily an indication of the failure of the whole principle, and other means should be sought and found to safeguard the health of the inhabitants of Sydney, without having recourse to throwing tons of very valuable material into the ocean.

THE SECRETION OF HYDROCHLORIC ACID IN GASTRIC JUICE.

The exact determination of the amount of hydrochloric acid in the gastric juice presents serious difficulties, because the acid enters into chemical combination with the proteins introduced into the stomach, with the pepsin and with the digestive products. The acid also replaces the phosphoric acid in the phosphates contained in the foods. The estimation of the quantity of hydrochloric acid in the gastric contents is likewise no easy matter. The characters of the digested material show great variations, so that the chemist can hardly ever omit to perform a long series of control experiments if his observations are to retain any real value. The accumulation of accurate information is therefore slow and tedious.

It is commonly stated that the gastric glands can undergo changes which lead to the production of the conditions of hyper-secretion, hyperacidity, hypo-secretion and hypoacidity in regard to hydrochloric acid. The glands of the stomach may secrete a greater or less amount of hydrochloric acid in relation to the rest of the constituents, or they may secrete more or less gastric juice as a consequence of the food ingested. Hyperacidity and hypoacidity may thus be caused by variations of the concentration of hydrochloric acid in the gastric juice secreted, or these conditions may result from a greater or less secretion of gastric juice of normal concentration.

Many years ago Pavlov asked whether any evidence existed of the occurrence of hyperacidity of the gastric juice. He suggested that all states of hyperacidity of the gastric contents were due to hyper-secretion of gastric juice of normal acidity. Although many investigations have been made, no method, as yet devised, has yielded data which can decide this question. Some information to which a passing reference may be directed has been collected by the way. There seems to be little doubt that the concentration of hydrochloric acid in the secretion of the fundal glands is almost twice as much as was supposed by the older physiologists. With improved means for collecting gastric juice, free from mucus and food, the quantities of hydrochloric acid

present in fractions obtained from healthy persons have been observed to vary between 0.4% and 0.55% hydrochloric acid. These persons show no signs of digestive abnormality, and complain of no symptoms of disturbed digestion. In the second place, it has been noted that the figures, representing the quantities of hydrochloric acid in the gastric juice of normal people, are higher than those obtained under any other conditions. Whenever the material removed from the human stomach contains mucus, partially or completely digested food or other matter, the concentration of hydrochloric acid in the mixture is less than that found in the gastric juice of healthy individuals. Gastric contents invariably contain less hydrochloric acid than gastric juice. Whatever may be the pathological condition of the stomach, the amount of hydrochloric acid in a given volume of the gastric juice or of the gastric contents is less than that present in the same volume of pure gastric juice from a healthy person.

Increased amounts of hydrochloric acid have not infrequently been noted in the gastric contents from persons with gastric and duodenal ulceration. The thirty-third contribution[1] to the physiology of the stomach issued from the Hull Physiological Laboratory of the University of Chicago deals with the secretion of hydrochloric acid under these circumstances. L. L. J. Hardt has carried to a successful conclusion this difficult investigation. He has employed dogs in which a pouch has been made from the fundus of the stomach, according to the method of Pavlov. This pouch has been connected with a fistulous opening in the abdominal wall. In this surgical proceeding the nerves and blood-vessels of the portion of the stomach forming the pouch are retained intact. Pavlov has proved that the secretion from such a pouch has the same composition as the secretion from the remainder of the stomach. The rate of secretion from the pouch also runs parallel to the rate of the secretion of the stomach. When the dogs had recovered from the operation they were subjected to a series of studies to determine the conditions of continuous secretion, which occurs when they are not fed, and to determine the secretion after a meal of three hundred grammes of meat. One hundred and seventy-five sets of figures have been obtained from five dogs, in which ulceration was later produced. Ulceration has been induced by the intravenous injection of streptococci, isolated from gastric and duodenal ulcers in men, sheep, cattle and dogs. Ulcers of a chronic kind have appeared in the pouch, in the stomach, or in the duodenum of eight out of fourteen dogs injected. An ulcer has been regarded as chronic when it has been found at autopsy five to eight weeks after the injection. Acute ulcers appeared in a number of normal and pouched dogs which died in eight to twenty-one days after the injection. No observations have been made in the dogs which did not recover their health after the injection. Attempts to induce ulceration with colon bacilli, isolated from gastric ulcers, were not successful, as the dogs invariably died from the intravenous injections. One hundred and fifty-five sets of figures have been obtained which relate to the secretion of the pouch before and after feeding. Seventy of these sets of observations have reference to the secretion when a gastric ulcer is present and eighty-five to secretion when a duodenal ulcer has occurred. The observations have been carried out on the five dogs in which the studies have been made before the production of ulceration. The position of the ulceration has been observed at the autopsy made when the dog was killed.

In considering the results of these experiments, it will be noted that the gastric secretion of each dog has been observed before and after the production of ulceration. As a large number of observations have been made on each dog, the averaged results eliminate the effects of the chance variations which are noted in studies on gastric secretion. The author has found that no change has occurred in the acidity of the gastric juice which could be considered as hyper-acidity. In one dog there has been a slight depression in the concentration of the hydrochloric acid. With regard to hyper-secretion, a tendency to continued secretion has been noted in two out of the five dogs. The degree to which this augmentation occurred has not been marked. Hyper-secretion of gastric juice occurred in these same dogs after a meal, but the acidity of the gastric juice was not increased. Similar conclusions can also be drawn from the figures obtained from observations upon two dogs in which ulcers appeared spontaneously in the pouches, made by the method of Pavlov. These results show that the presence of ulceration does not increase the acidity of the gastric juice, though it may induce an increased secretion. The author is continuing his experiments to discover the mechanism by which this hyper-secretion is brought about. He may be congratulated on the ability he has shown in obtaining information of much value in this difficult field of study.

[1] *American Journal of Physiology*, Vol. XL., p. 314, 1916.

THE MINERS' CORPS COMFORT FUND.

The Royal Society of New South Wales, the University Engineering Society and a number of kindred associations have elected representatives to form a committee to look after the welfare of the members of the Miners' Corps. The Corps owes its existence to Professor David, F.R.S. The Corps consists of over 2,000 men, the majority of whom are middle-aged men with families. The members are unassisted by the Government or by private employees, and will not have their usual rate of wages maintained for them while they are in the ranks. The extent of the sacrifice of these men calls for an equally prompt and tangible recognition on the part of those who have to stay at home. The Committee are organizing a concert, to be held at the Town Hall, Sydney, on September 18, 1916. The Hall holds between 3,000 and 4,000 persons, and the Committee aim at collecting £500. It is hoped that the scientific world will fill the Town Hall and thus set a fine example to the general community. Members of the medical profession will probably wish to contribute to this excellent fund. The seats cost but 3s. each, but Mr. O. W. Brain, the Honorary Secretary of the Technical Associations' Joint Committee for the Mining Corps' Comforts Concert, Royal Society's House, 5 Elizabeth Street, Sydney, will, we have no doubt, be pleased to receive any larger sum you may desire to send.

Dr. Lockhart Gibson informs us that he has returned to Brisbane, and is about to resume practice. Dr. Lockhart Gibson acted as ophthalmologist to the Third Australian General Hospital at Lemnos and at Abbassia, Cairo. During Dr. Kent Hughes's illness and subsequent absence he acted as consultant in the ear and throat department of the hospital. Dr. Lockhart Gibson was absent on military duty for 15 months.

Abstracts from Current Medical Literature.

MEDICINE.

(61) Anti-Typhoid Inoculation.

E. Glynn (*Liverpool Med.-Chirur. Journ.*, July, 1916) prefaces his account of the present state of our knowledge of anti-typhoid inoculation with a resumé of the principles of active and passive immunization. He points out that a second attack of enteric fever is rare (14 cases in 2,000). The serum of a person convalescent from enteric fever contains an increased quantity of specific agglutinins, opsonins and bacteriolysins, and possibly antitoxins. These substances usually disappear in a few years, but the immunity persists. This is explained by the supposed capability of the body to react more quickly to antigens by throwing out larger amounts of antibodies. Active immunization against *b. typhosus* by means of a vaccine is also signalized by an increase in antibodies, but the increase in the agglutinins is less than that of the other antibodies. Turning to Wright's vaccine treatment, he states that the vaccine consists of broth cultures of typhoid germs grown for about 42 hours. The cultures are killed by heating to 53° C. for one hour. Two doses of 500 and 1,000 millions are given with ten days' interval. Commercial vaccine prepared at St. Mary's Hospital is sterilized by heating cultures for one hour at 60° C. The dose is double that of the Army vaccine. Pfeiffer and Kolle's vaccine is given on three or four occasions at eight days' intervals. Vincent's vaccine is polyvalent. The bacilli are autolysed, macerated and sterilized in ether. Besredka's vaccine is a living culture; the bacilli are sensitized in anti-typhoid serum. The immunizing properties of these different vaccines are unequal. Glynn states that it is necessary to determine which is best. Leishman has determined that the immunizing properties are damaged by overheating, and also by the addition of the antiseptic while hot. He also says that Wright's method of standardization is inaccurate. It is advisable to give more than two injections, but Leishman considered that if three were prescribed, many men would refuse to submit. The author discusses at length the reaction, and adduces evidence that the vaccine has never produced any permanent harmful effects. He shows the effect of vaccination on the agglutinin reaction of the blood after each injection. In rare cases a hypersensibility toward the antigen is produced. In discussing the negative phase, he shows that, in the case of vaccination with *b. typhosus*, this is so slight as to be of no practical importance. He then turns to the subject of the duration of the protection and to its value. He is convinced that prophylactic vaccination greatly diminishes the incidence and mortality from enteric fever. He delivers an unanswerable rebuke to the anti-vivisectionists.

(62) Proteose Intoxication.

G. H. Whipple (*Journ. Americ. Med. Assoc.*, July 1, 1916) sets up the thesis that the symptoms of intestinal obstruction, of general peritonitis and of acute hæmorrhagic pancreatitis are due to a primary proteose, which may be precipitated by 95% alcohol or by half saturated ammonium sulphate. This proteose is readily isolated from a closed loop of intestine, and its toxicity for dogs has been proved to be 0.1 gramme per 7.5 kilogram dog. The same proteose can be recovered from sterile peritoneal exudates, proving that it is not a bacterial product. The proteose is derived from the proteins of the host. The author refers to the increase of non-coagulable nitrogen in the blood of acute intestinal obstruction. This he shows by experiment to be due to catabolism of the host's tissues, due to proteose intoxication. One proteose produces resistance to all other proteoses, and an animal with closed intestinal loop will exhibit but few clinical symptoms as a result of an injection of pure proteose. He suggests that the symptoms in sterile pleurisy, infarcts of the lung, pneumonia and several other conditions may be due to proteoses.

(63) Presystolic Murmurs.

L. Lumsden teaches that there are three varieties of presystolic murmur which should be differentiated from one another (*Lancet*, April 29, 1916). The first is Flint's murmur. It is produced by the regurgitation of blood through an incompetent aortic valve. This murmur is associated with a diastolic murmur over the aortic orifice; the second sound at the apex is not reduplicated, but is immediately followed by the presystolic bruit, leading up to a rather abrupt first sound, marked dyspnœa and palpitation are noted after exertion; there are signs of cardiac enlargement, and a presystolic thrill may be palpable. This condition is extremely serious, and should be regarded as an absolute bar to life insurance or to any heavy work. The second variety is due to a narrowing of the mitral valve. The murmur heard at the apex is presystolic in time, increases gradually in intensity and ends abruptly in a short and accentuated first sound. The apex beat is heaving and diffuse, and may be displaced outwards if dilatation is present, and downwards if the heart is hypertrophied. A presystolic thrill is felt. The second sound is reduplicated, and it is always accentuated over the pulmonary area. The patients are usually dyspnœic, and incapable of performing hard work. The acceleration of pulse-rate due to ascending a stair of 20 steps does not disappear for three or four minutes. The author attaches considerable importance to this sign. It is not diagnostic of the cardiac lesion, but signifies a weakness of cardiac muscle. The third variety is called the astenotic presystolic murmur. It may occur in apparently healthy persons capable of hard work. The murmur is definitely presystolic in time, and the second sound is not reduplicated, nor is the second pulmonary sound accentuated. There is no enlargement of the heart. The murmur is usually increased by exercise or nervousness. He regards it as unimportant. After the stair test the pulse-rate returns to normal in less than one minute.

(64) Basal Metabolism.

The control of physiological processes by means of calorimetric measurements is not often undertaken in the clinical practice of medicine, partly because accurate work requires more time and knowledge than the average medical practitioner has at his disposal, and partly because a calorimeter is a very expensive apparatus. J. H. Means points out that while direct calorimetry, *viz.*, the determination of the heat given off by an organism by actual measurement, necessitates the employment of a calorimeter, indirect calorimetry, *viz.*, the calculation of the heat production from the gas exchange, can be carried out with the aid of a simple and not very expensive piece of apparatus (*Boston. Med. and Surg. Journ.*, June 15, 1916). He points out that the respiratory quotient is the index of the kind of material being burned in the body. The ratio $\frac{CO_2}{O_2}$ will be a constant for any given substance, but will vary according to the structure of the molecule burned. From the respiratory quotient and the amount of oxygen absorbed, the heat production can be calculated. Normal metabolism may be altered by the taking of food, the doing of muscular work and the exposure to cold. Under abnormal conditions, fever, acidosis and various disturbances of the internal secretions also increase metabolic changes. When the factors which modify metabolism are eliminated, there remains the basal metabolism, and this appears to be a constant. In practice, the subject is examined during complete muscular rest, 14 or more hours after food, in a warm room. All warm-blooded animals have the same basal metabolism per unit of surface area. The author gives details of his studies in normal individuals, in those affected by obesity, simple goitre, myxœdema, exophthalmic goitre and a few other conditions. He finds that wide variations in basal metabolism are an indication of a pathological process. A marked rise occurs in hyperthyroidism and a marked fall in hypothyroidism. He is of opinion that basal metabolism furnishes the best index of the severity of hyperthyroidism, is a quantitative means of following the course and judging the effect of treatment, and a valuable aid in arriving at a differential diagnosis. Obesity, even if extreme, is not associated with a reduction in basal metabolism. When this occurs there is clinical evidence of defective internal secretion. The author holds that a clearer conception of

the food requirements in disease is furnished by basal metabolism than by any other factor.

NEUROLOGY.

(65) Syphilis of the Nervous System.

Head and Fearnsides (*Brain*, Vol. XXXVII., Part I., 1914) thought that all manifestations of syphilis of the central nervous system were consequent on the direct activity of the *Spirochaeta pallida*. There was no occasion to speak of "secondary," or "tertiary," or "parasyphilitic" manifestations. The clinical picture depended on the situation of the spirochaetal activity and on the susceptibility of the tissues. Cases could be divided into those of *syphilis meningo-vascularis* and those of *syphilis centralis*. The meaning of the first name was obvious, the category included encephalitis and acute dementia, hemiplegia, affections of the cranial nerves, muscular atrophy, myelitis, lateral and combined spinal degeneration and epilepsy; the second name applied to those cases in which the lesion and degeneration lay within the structure or parenchyma of the nervous system, and had for clinical varieties *dementia paralytica*, *tabes dorsalis*, muscular atrophy, optic atrophy, gastric crises and epileptiform manifestations. *Syphilis mennigo-vascularis* yielded to adequate treatment; *syphilis centralis* did not, because arsenical compounds, as usually administered, did not enter the central nervous system in effective quantity. *Syphilis mennigo-vascularis* might simulate *syphilis centralis*, thus, encephalitis, a curable disease, might be mistaken for and abandoned as dementia paralytica; similarly, gastric crises did not always betoken *tabes dorsalis*. Complete diagnosis and prognosis could not be made until the patient had been under observation and treatment for six months and the cerebro-spinal fluid examined from time to time. In *syphilis meningo-vascularis*, the Wassermann reaction in the cerebro-spinal fluid depended upon whether the spinal or basal meninges were affected; it might be negative if the disease were limited to the brain. Under treatment with salvarsan or neo-salvarsan a positive reaction would usually become negative within six months. In *syphilis centralis* the reaction might be positive only so long as the disease was active. In every case of syphilis of the nervous system, secondary degeneration must result, therefore, in order that the disease might be checked, early diagnosis and treatment were most important. Early signs and symptoms, which might escape the notice of clinicians not interested in neurology were changes in personality and aptitude, disturbances of sleep, headache, shivering attacks, root pains, abnormal reactions of the pupil and disturbances of micturition. The writers' conclusions were supported by a series of clinical records.

(66) Aplasia Axialis Extra-corticalis Congenita.

Batten and Wilkinson (*Brain*, 1914, Vol. XXXVI.) describe an unusual disease of the nervous system as familial and hereditary, and as having its onset in the first three months of life, even if it is not actually congenital. It presents symptoms which in many respects are similar in its earlier stages to those of disseminated sclerosis and cerebellar disease, and in its later stages to those of Friedreich's disease. It is very slowly, if at all progressive, affects males chiefly and is transmitted by healthy females. In the family described, males only were affected. It corresponds to none of the commonly recognized types of familial affection, but the symptomatology so closely resembles that presented by the family recorded by Pelizaeus and Merzbacher that the disease is believed to be of the same nature, although there have been no pathological examinations to support the belief. The cases reported by Nolan also resembled these cases, although here, likewise, no pathological examination had been made. The family first came under notice in November, 1913, when two boys, aged four and two years, were admitted into the Hospital for Sick Children, Great Ormond Street, London. A third member of the family, aged 24 years, an asylum inmate, and a fourth member, aged 17 years, in a workhouse infirmary, have since been discovered. The writers summarize their paper as follows: "A familial and hereditary disease, having symptoms resembling disseminated sclerosis, is described. Six males at least were affected in two generations. The subjects of this disease are almost always males, and the condition is transmitted by unaffected females. Those affected are either congenitally diseased or exhibit symptoms in the first months of life, the progress of the disease being slow. They are mentally defective and ataxic, show nystagmus, speech defect, and defective development, with weakness and spasticity of the lower limbs. It is considered probable that these cases belong to the type of familial disease described by Pelizaeus and Merzbacher, under the title "*aplasia axialis extra-corticalis congenita*."

(67) The Anatomy and Physiology of the Corpus Striatum.

Kinnier Wilson (*Brain*, Vol. XXXVI.), opening with a historical chapter, gives an account of an important experimental research into the anatomy and physiology of the *corpus striatum*. Twenty-five monkeys were operated upon in the laboratory of experimental neurology at University College, London, under the ægis of the late Sir Victor Horsley. Both stimulation and electrolysis by means of the stereotaxic instrument devised by Clarke and Horsley were utilized. He found that stimulation of the *corpus striatum* was essentially negative; also electrolytic lesions small and large alike failed to reveal themselves by any obvious, or constant, or unequivocal defect of motility. He then studied anatomical connexions, and his cardinal findings were that while the *putamen*, *caudate nucleus* and *globus pallidus* were closely linked to each other and to the *optic thalamus* and *regio subthalamica*, they were independent of the cortex and not connected directly with the spinal cord. Therefore, the *corpus striatum* was an autonomous centre. It had no function comparable to that of the motor cortex, nor did it govern so-called automatic movements, but be believed it exercised a steadying influence, viâ the *lenticulo-rubro*—spinal projection—system, on the innervation from the cortico-spinal or pyramidal system of the "final common path" (Sherrington) —the lower motor neuron, and that it was concerned with the maintenance of "tone" of the skeletal muscles.

(68) Wounds of Peripheral Nerves in War.

Babinski, demonstrating a series of cases of nerve wounds, at the Société de Neurologie, Paris, 1915, remarked that in differential diagnosis the loss of power produced by section of tendons and muscles must be kept in mind. Confusing cases might arise, which could only be interpreted by a neurologist. The same applied to cases of hysterical paralysis grafted on a wound, wherein it was essential to determine what was referrable to the lesion, and what to suggestion. Complete section of a nerve by a bullet was much less common than a partial section, or a contusion, or a "paranervous" injury. Sudden, extremely violent nerve-pain at the time of the injury pointed plainly to involvement of the nerve. Fibro-tendinous contractures were common, and were to be met by massage and exercises. Progress varied; a rapid recovery pointed to contusion. Even in cases of unmistakeable section, return of function might occur much sooner than expected. In the majority of cases surgical intervention was indicated, and in cases attended by pain the operation usually brought prompt relief. In many other cases good results had been obtained, and in none had the paralysis been increased. Those were the most hopeless cases in which surgical measures did not in due course bring amelioration.

(69) Slight Shell and Bomb Wounds of the Head.

Of slight shell and bomb wounds of the head, Leriche (*Lyon Chirurgical*, September, 1915) saw 653 and explored and followed up 397. However insignificant the wound might appear, he advocated prompt examination of the bone by scalp flap under ethyl chloride. If the bone were found discoloured, grazed or depressed, he trephined, but he never incised an intact dura, not even when appearances pointed to subjacent hæmatoma. In reducing intracranial hypertension and relieving intolerable headache, he found lumbar puncture, performed every two or three days, of great value. In another paper in the same journal, Leriche advised prompt trephining of both the entrance and exit of perforating bullet wounds of the head, and he gave this advice, notwithstanding that it was contrary to classical doctrines promulgated at the beginning of the war.

British Medical Association News.

SCIENTIFIC.

A clinical meeting of the New South Wales Branch was held at the B.M.A. Building, 30-34 Elizabeth Street, Sydney, on August 11, 1916, Dr. Sinclair Gillies, the President, in the chair.

Dr. E. Temple Smith gave a demonstration of the electrically-lighted ophthalmoscope. He pointed out the advantages of this instrument over the reflecting ophthalmoscope in the ease of examination and in the fact that a dilated pupil and a darkened room were rendered unnecessary. He considered the Marple-Morton instrument, lighted from the town current or from three dry cells, the most generally useful. The variety with the battery in the handle, which he also showed, was very useful for bedside work.

Dr. H. C. Adams read a paper on mercurial cream, its manufacture, its physical properties and the technique of its use. He pointed out that much of the information contained in the paper had been published in the *Journal of the Royal Army Medical Corps* (May, 1910). The generally unsatisfactory nature of mercurial creams obtainable had caused him to carry out a large number of pharmaceutical experiments. In this work he had been assisted by Mr. F. W. Hooper, the senior Pharmacist at the Royal Naval Hospital, at Haslar. Prior to 1907, the creams supplied to the Navy by contractors had been prepared according to Lambkin's formula, and were highly unsatisfactory. The mercury was not in a state of fine subdivision, the medium was not workable in the syringe and needles without warming, and in consequence of this fact the metal accumulated at the bottom of the vessels after repeated warming unless continued stirring was carried out. In some cases patients were sent to the hospital with a record of 15 or 16 weekly injections, and one had had 36 without any appreciable effect having been produced on the disease. Luckily for them, the patients had received injections of fat only. Dr. Adams was convinced that fatalities which had occurred had been due to very large doses of mercury which had been drawn from the lower strata of an unsatisfactory cream.

A good cream should contain the mercury in a state of extremely fine subdivision; the basis should be sufficiently fluid at ordinary temperatures to work freely in the syringe and needle, and should be sufficiently viscid to suspend the metal completely. Further, there should be no abrupt transition from the semi-solid to the liquid state on warming.

He had found by experiment that the best means of securing a fine division of the metal was by rubbing it mechanically in a mortar with half its weight of lanoline. Cream prepared from this paste had been kept in a tube in an incubator for several days. At the end of the period, although the mercury had accumulated, the dark grey or nearly black deposit did not contain any visible globules. On cooling, it was found that it had not undergone any deterioration by the aggregation of minute globules into larger ones. After repeated trials, lanoline and paraffin were selected as the best basis for the cream. The formula eventually adopted was as follows:—

Mercury, 20 parts by weight.
Anhydrous lanoline, 30 parts by weight.
Chlorbutol, 2 parts by weight.
Liquid paraffin, to 100 parts by measure.

The cream made in this manner contained 1 grain in 5 minims. The chlorbutol had been added as an antiseptic and analgesic. At first the trituration was carried out by hand, but later a special mill, with a large granite mortar and heavily weighted pestle, driven by power, was substituted. The mercury was purified in the usual manner by washing in nitric acid, and again in water and filtering through chamois leather. The purest anhydrous lanoline was used after sterilization with heat and filtration. One part of lanoline was introduced into the mill and two parts of mercury gradually added as the globules disappeared. The trituration was continued until a sample showed the subdivision under the microscope to be sufficiently fine. The paste was then cautiously heated in a porcelain dish, with the addition of lanoline, and finally the sterilized paraffin, with the chlorbutol in it, was added, to bring the volume up to the requisite measurement.

Dr. Adams demonstrated various samples of cream prepared in this manner. He laid stress on the fluidity of the mass and on the darkness of its colour, which he regarded as an indication of the fineness of the particles of mercury. Microphotographs of the emulsions were also shown. Two samples were from creams which had been prepared for Dr. Adams locally.

He also exhibited a suitable syringe for injecting the mercurial cream. The syringe was of glass, and the shoulders were stronger than usual, to obviate the risk of breakage. The needles employed were ordinary steel ones At first it was thought that platino-iridium needles were essential. The disadvantage of these needles was that, since they were made by bending a sheet of metal round a stilette and soldering the seam, the mercury attacked the solder and leakage occurred. Steel was not attacked by mercury, and since the needles were drawn and not soldered, they answered the purpose well. They were cheap, and could therefore be replaced frequently.

Dr. Adams explained that as the risk of mercurial poisoning was a serious one, every precaution should be taken before an intramuscular injection was carried out. The patient should be carefully weighed each week before injection. As a rule, the weight increased, or, at all events, remained stationary under the treatment. The condition of the teeth and gums should be noted and defects remedied. A suitable mouth wash should be used frequently. He laid great stress on the necessity of a routine examination of the urine. When albumin was discovered after an injection, this method of exhibiting mercury should be temporarily given up in favour of some other. If the albuminuria was due to the syphilis, it cleared up rapidly, but if it was due to organic renal disease, intramuscular injections should never be adopted.

In regard to technique, Dr. Adams explained that slight errors were sometimes the cause of trouble. After the syringe had been filled, the bead of cream at the point of the needle was removed and care was taken to see that no filaments remained at the eye of the needle. It was quite essential that no cream should be injected into the skin or subcutaneous tissue. The site of the injection was the buttock, and it was necessary to detach the syringe from the needle after the latter had been introduced into the glutei, lest its point rested within the lumen of a vessel. A slight delay was necessary before the needle was withdrawn, to ensure complete exudation. This precaution was essential to avoid the deposition of mercury along the needle track.

Dr. Sydney Jamieson congratulated Dr. Adams on the excellent results he had obtained in discovering the best conditions for preparing a mercurial cream. He thought that, since salvarsan was practically unobtainable and the arseno-benzol substitutes were less satisfactory, mercurial cream was being more freely used. He referred to the risk of mercurial poisoning following the use of creams, especially in subjects with renal disease. Mercury attacked the kidneys and gave rise to an acute nephritis.

Dr. E. Temple Smith asked whether Dr. Adams's cream was obtainable in Sydney.

Dr. C. E. Corlette had had experience of mercurial cream before the introduction of salvarsan. He regarded it as the best method of treating syphilis by mercury. There was one marked disadvantage associated with the injections. The patients found them so painful that they frequently refused to submit to a second injection. In his opinion, galyl was an excellent substitute for salvarsan, and even if its therapeutic value was not quite equal to that of salvarsan, it was most useful. Herpes, which was seen at times after the exhibition of salvarsan, was more frequently met with after injections of galyl. He referred to a fatal case of mercury poisoning with 5 grains of calomel.

Dr. C. Norman Paul considered that Dr. Adams's cream had several great advantages over the other mercurial creams. The fact that the pain caused on injection was considerably less and the fluidity of the cream, rendering heating unnecessary, were important factors.

Dr. W. F. Litchfield asked Dr. Adams whether he still preferred to treat syphilis by mercurial injections rather

than by salvarsan. He understood that the combined treatment with mercury and arsenic was usually favoured.

Dr. Sinclair Gillies advocated the combination of mercury and salvarsan for the treatment of syphilis. He asked Dr. Adams what was the percentage of troubles met with as a result of intramuscular injections of mercurial cream. He recognized that this method had advantages over giving mercury by mouth. The patient got his dose. When prescribed in pill form, the practitioner could never be sure that the patient took the pills. On the other hand, once a dose had been injected it could not be removed, and if mercurial poisoning developed there were no means of getting rid of the source of poisoning. He also asked Dr. Adams to state what, in his opinion, were the relative merits of the various methods of giving mercury.

In his reply, Dr. Adams repeated that the danger of inducing mercurial poisoning could be reduced to a minimum if the urine were examined regularly before each injection. He had neglected to do this in one case. The patient was a healthy looking man, and he had been tempted to give the injection without troubling about the urine. He injected ½ grain at the first dose and 1½ grains altogether. Very acute mercurial poisoning ensued. On enquiry, he found that the patient had had scarlatina before, which had been followed by nephritis. The risk of poisoning with Lambkin's cream was great, because the mercury tended to separate out of the emulsion and to collect at the bottom of the jar. In reply to Dr. Temple Smith, he stated that his cream was obtainable from Messrs. Elliott Brothers. Referring to Dr. Corlette's remarks, he pointed out that no one at Haslar was forced to submit to injection treatment. The cream had been introduced about the same time as salvarsan. Otherwise, he felt sure that its use would have been more general. If the technique were followed carefully, the injections did not cause any pain. There was some discomfort, but this did not amount to pain. The sailors preferred the injections to the other modes of treatment, because they had learned that the results were better. Pain was produced if errors in technique were committed. Although there was no hard-and-fast rule, he usually injected a half of a grain at a time, and gave six or eight injections in a course, with a week's interval. Men working laboriously got rid of the mercury more rapidly than those whose occupation was sedentary. In reply to Dr. Gillies, he stated that the only troubles he had experienced were traceable to errors in technique. He considered that the best method of giving mercury was by intramuscular injection. The experience at Haslar was that the men would not swallow pills. They objected to the disturbance of digestion, and frequently spat out the pills immediately after they left the dispensary. On a dry day, a large quantity of mercury pills was found in the dust swept up outside the room. Inunction was an excellent method, but necessitated the employment of a skilled rubber. For soldiers and sailors it was useless to employ this method, because it was never adequately carried out.

Dr. E. Jeffrey read the notes of a case of *extreme enlargement of the liver due to secondary deposits of adeno-carcinoma*. These notes will be published in a subsequent issue of the *Journal*.

Dr. J. C. Windeyer also read notes of a case of *ovarian pregnancy*, and demonstrated the specimen. The notes will be published in full in a subsequent issue.

The following have been nominated for election to the New South Wales Branch:—

Dr. Gilbert C. Wellisch, Epping.
Dr. Ernest M. Caffrey, Royal Alexandra Hospital, Camperdown.
Dr. Francis F. Brown, Bingara.

Medical Societies.

THE PATHOLOGICAL CLUB OF SYDNEY.

A meeting of the Pathological Club was held at the Microbiological Laboratory of the Department of Public Health, Sydney, on July 19, 1916.

Dr. C. S. Willis exhibited a *canine tooth with a piece of wood passing through its centre* and projecting for ⅝ inch beyond the apex of the fang. The tooth had been extracted from a boy aged 13 years. He had evidently gouged out the centre of the tooth and then bored into the jaw-bone for a distance of ⅝ inch with the piece of wood. The piece of wood had broken off flush with the surface of the crown of the tooth.

Dr. Burton Bradley showed sections of a *tumour from the base of the brain, possessing an epithelial structure*. In parts the structure suggested a tubular formation, the spaces being apparently filled with colloid. In other parts its appearances suggested a compound, possible squamous, epithelium and cell nests were found. He suggested that it had probably originated from the neuro-pharyngeal canal, though it might be an endothelioma.

He also exhibited two *lympho-blastomata*, one from the retro-peritoneal tissues and the other from the posterior mediastinum. The second case was interesting, because of its relationship to certain important thoracic structures, the œsophagus, the bifurcation of the bronchi and the trachea.

Dr. Bradley further demonstrated a *duct carcinoma of the breast*.

Dr. J. B. Cleland showed *growths containing large giant cells from the abdominal wall*. In the left side of the abdominal wall, in the subcutaneous tissues, there had been a large "parent" growth, near the middle line, with several smaller nodules to its left. Sections showed the presence, in a cellular fibrous stroma, of a number of giant cells, some of them very large and with many nuclei. The nuclei were sometimes in the centre and sometimes grouped at one side, as in tubercular cases. Tubercle bacilli were not detected in sections, though this did not necessarily exclude the condition from being tubercular. The giant cells had the appearance of foreign body giant cells. He had seen a very similar condition to this following the injection of paraffin into the bridge of the nose for cosmetic purposes. In the present instance there was no evidence to suggest a similar cause, though it was remarkable that the growths were confined to the left side of the abdomen, the side the most convenient to reach with a hypodermic needle held in the right hand.

Dr. Cleland next showed some *peculiar concentric bodies, probably of parasitic origin from the sea mullet (Mugildobula)*. Scattered throughout the musculature and under the serous membranes, and on the lower gill plates, were small, yellowish nodules. On section, these were found to consist of a number of layers of concentrically arranged cells, somewhat resembling the cell nests of a squamous epithelioma. Apparently these cells were reactionary cells on the part of the fish tissues. No parasite of a helminthic or protozoal nature has hitherto been recognized in relation to these concentric bodies.

He also exhibited an *infarcted area in the heart*. The patient was a woman, aged 56 years, on whom Dr. Palmer had conducted a post-mortem examination. An infarcted area was found in the wall of the left ventricle, separated from the unaffected area by a whitish, slightly irregular line. An atheromatous ulcer was found in the supplying coronary vessel.

Public Health.

HEALTH OF NEW SOUTH WALES.

The following notifications have been received by the Department of Public Health, New South Wales, during the week ending July 29, 1916:—

	Metropolitan Combined Districts.		Hunter River Combined Districts.		Remainder of State.		Total.	
	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.
Enteric Fever ..	1	3	0	0	3	0	4	3
Scarlatina	48	1	1	0	30	2	79	3
Diphtheria	38	3	3	0	72	2	113	5
C'bro-Sp'l Menin.	5	4	1	1	7	2	13	7
Infantile Paralysis	0	0	0	0	1	0	1	0
Pul. Tuberculosis	37	14	2	1	†	..	39	15
Malaria	1	0	0	0	0	0	1	0

† Notifiable only in the Metropolitan and Hunter River Districts.

The following notifications have been received by the Department of Public Health, New South Wales, during the week ending August 5, 1916:—

	Metropolitan Combined Districts. Cs.	Dths.	Hunter River Combined Districts. Cs.	Dths.	Remainder of State. Cs.	Dths.	Total. Cs.	Dths.
Enteric Fever	9	0	0	0	3	0	12	0
Scarlatina	54	0	3	0	30	0	87	0
Diphtheria	42	3	0	0	61	1	103	4
C'bro-Sp'l Menin.	8	6	1	0	7	1	16	7
Pul. Tuberculosis	29	12	0	0	†		29	12
Malaria	2	—	0	0	0	0	2	—

† Notifiable only in the Metropolitan and Hunter River Districts.

SMALL-POX IN NEW SOUTH WALES.

The following notifications have been received by the Department of Public Health, New South Wales, during the week ending August 8, 1916:—

	Cases.
Country—	
Walgett	6
Swansea (Lake Macquarie)	3
Total	9

We are informed that one case of small-pox has been discovered in an inhabitant of Narrabri during the week ending August 12, 1916.

THE HEALTH OF VICTORIA.

The following notifications were received by the Department of Public Health, Victoria, during the week ending July 30, 1916:—

	Metropolitan. Cs.	Dths.	Rest of State. Cs.	Dths.	Total. Cs.	Dths.
Diphtheria	67	3	46	1	113	4
Scarlatina	21	0	12	0	33	0
Enteric Fever	3	0	2	2	5	2
Pulmonary Tuberculosis	15	8	13	13	28	21
C'bro-Spinal Meningitis	6	—	13	—	19	—

The following notifications have been received by the Department of Public Health, Victoria, during the week ending August 6, 1916:—

	Metropolitan. Cs.	Dths.	Rest of State. Cs.	Dths.	Totals. Cs.	Dths.
Diphtheria	74	4	42	1	116	5
Scarlatina	18	1	10	0	28	1
Enteric Fever	2	0	1	0	3	0
Pulmonary Tuberculosis	10	5	19	4	29	9
C'bro-Spinal Meningitis	14	—	13	—	27	—
Infantile Paralysis	0	—	1	—	1	—

INFECTIVE DISEASES IN QUEENSLAND.

The following notifications have been received by the Department of Public Health, Queensland, during the week ended July 29, 1916:—

Disease.	No. of Cases.
Cerebro-Spinal Meningitis	4
Varicella	28
Erysipelas	1
Diphtheria	28
Pulmonary Tuberculosis	9
Scarlatina	4
Enteric Fever	9
Malaria	22

The following notifications have been received by the Department of Public Health, Queensland, during the week ending August 5, 1916:—

Disease.	No. of Cases.
Diphtheria	31
Varicella	22
Scarlatina	4
Cerebro-Spinal Meningitis	3
Pulmonary Tuberculosis	11
Relapsing Fever	1
Enteric Fever	5
Erysipelas	4
Puerperal Fever	1
Ankylostomiasis	2
Malaria	10

INFECTIVE DISEASES IN SOUTH AUSTRALIA.

The following notifications have been received by the Department of Public Health, South Australia, for the four weeks ending July 29, 1916:—

	Adelaide. Cs.	Dths.	Rest of State. Cs.	Dths.	Totals. Cs.	Dths.
Measles	70	1	341	1	411	2
Diphtheria	32	3	114	10	136	13
Pertussis	12	0	114	3	126	3
Scarlatina	1	0	26	0	27	0
Pulmonary Tuberculosis	9	12	16	15	25	27
C'bro-Spinal Meningitis	7	5	22	1	29	6
Enteric Fever	1	0	1	0	2	0
Erysipelas	4	0	13	0	17	0

INFECTIVE DISEASES IN WESTERN AUSTRALIA

The following notifications have been received by the Department of Public Health, Western Australia, during the week ending July 15, 1916:—

	Enteric Fever. Cases.	Diphtheria. Cases.	Scarlatina. Cases.	Pulmonary Tuberculosis. Cases.	Erysipelas. Cases.	C'bro-Spinal Meningitis. Cases.
Metropolitan	4	8	1	6	2	2
Rest of State	0	10	2	9	0	0

The following notifications have been received by the Department of Public Health, Western Australia, during the week ending July 22, 1916:—

	Enteric Fever. Cases.	Diphtheria. Cases.	Scarlatina. Cases.	Pulmonary Tuberculosis. Cases.	Erysipelas. Cases.
Metropolitan	2	4	3	10	2
Rest of State	0	5	0	5	0

THE HEALTH OF TASMANIA.

The following notifications have been received by the Department of Public Health, Tasmania, during the week ending July 29, 1916:—

Disease.	Hobart. Cases.	Launceston. Cases.	Country. Cases.	Whole State. Cases.
Diphtheria	2	2	18	22
Enteric Fever	1	1	1	3
Pulmonary Tuberculosis	1	0	2	3
Scarlatina	1	0	0	1
C'bro-Spinal Meningitis	1	0	0	1
Puerperal Fever	0	0	1	1

The following notifications have been received by the Department of Public Health, Tasmania, during the week ending August 5, 1916:—

Disease.	Hobart. Cases.	Launceston. Cases.	Country. Cases.	Whole State. Cases.
Diphtheria	2	2	8	12
Pulmonary Tuberculosis	2	0	3	5
Enteric Fever	0	0	1	1
C'bro-Spinal Meningitis	0	0	3	3

THE HEALTH OF HOBART.

The following notifications have been received by the Department of Public Health, Hobart, during the month ending July 31, 1916:—

	Cases.
Diphtheria	13
Puerperal Fever	2
Cerebro-Spinal Meningitis	3
Scarlatina	1
Enteric Fever	1
Pulmonary Tuberculosis	4

THE HEALTH OF AUCKLAND.

The following notifications have been received by the District Health Officer, Auckland, during the month of July, 1916:—

	City. Cases.	Suburbs. Cases.	Country Districts. Cases.	Total Cases.
Scarlatina	44	33	57	134
Diphtheria	12	14	38	64
Enteric Fever	2	2	23	27
Pulmonary Tuberculosis	8	10	9	27
Septicæmia	2	2	3	7
C'bro-Spinal Meningitis	0	0	2	2

INFECTIVE DISEASES.

The following information is contained in the Bulletin of the Quarantine Service issued on July 21, 1916:—

Small-pox.

There have been six cases of variola reported in New South Wales during the fortnight ending July 20, 1916. There was one case in the metropolitan area, four cases at Narrabri, and one at Tamworth.

Two cases have occurred in the Straits Settlements between June 12 and 19, 1916. No further cases have been reported elsewhere.

Plague.

The returns for India for the period from May 21 to June 3, 1916, include 1,058 cases of plague, with 859 deaths. In the period between May 19 and June 15, 1916, 118 deaths from this disease occurred in Egypt. There were 14 cases in Ceylon during the fortnight ending June 10, 1916, and one case with one death in the Straits Settlements between July 3 and July 19, 1916.

Cholera.

The only cholera report received since the issue of the last Bulletin is from the Straits Settlements. It appears that there were five cases and four deaths at that place between July 1 and 19, 1916. Four of these cases and three of the deaths occurred in the prison.

Quarantine Regulations.

A Statutory Rule amending a quarantine regulation and including a new regulation has been issued on May 10, 1916. The amended regulation provides for the efficient obstruction of all openings and holes in the side of a vessel next to the wharf or lighter or other vessel; for the employment of an efficient rat disc on every rope or hawser connecting the vessel to a wharf or other vessel; for the illumination from sunset to sunrise of the side of a vessel if required, and other means for the prevention of the migration of rats to and from the vessel. The second part of the amended regulation deals with the definition of an effective rat guard, disc or screen.

The new regulation requires the master or owner of a vessel to give notice to the Quarantine Officer 24 hours before, when a vessel is about to be docked. .

Bulletin No. 9 of the Quarantine Service, which was issued on August 4, 1916, contains the following information:—

Variola.

The number of cases of variola reported in New South Wales between July 21 and August 3, 1916, was 21. Two of these occurred in the metropolitan area and 19 in country districts.

Since the issue of the last bulletin, 749 additional cases of small-pox have been reported from the Dutch East Indies. There were 236 deaths. During the period from June 20 to July 3, 1916, there were two cases and one death in the Straits Settlements. One fatal case was reported in Hong Kong during the week ending July 16, 1916.

Plague.

The number of cases of plague notified between June 4 and June 17, 1916, in India was 729. In the same period there were 578 deaths. There were 56 cases and 25 deaths from plague in Egypt between June 16 and June 29, 1916. During the period from June 11 to June 24 there were 19 cases reported at Ceylon. There were 12 cases and 12 deaths between June 3 and June 30 in Java, and one case and one death between June 11 and June 17 in Hong Kong. One fatal case was reported during the week ending July 27, 1916, in the Straits Settlements.

Cholera.

The number of additional cases reported from the Dutch East Indies was 243, with 181 deaths. A Bill of Health for the fortnight ending July 15, 1916, issued in the Philippine Islands, deals with 18 cases and 6 deaths. There were two cases of cholera reported at Senggora, Siam, and one death on May 20, 1916. The number of cholera cases notified in the Straits Settlements between June 20 and July 3, 1916, was six. All these cases occurred in the prison.

Medico-Legal

FLESH FOOD SWINDLES.

On August 3, 1916, W. C. Crawford was summoned to appear at the Central Police Court, Sydney, to answer a charge of selling an article called Flesh Food, which was falsely described, in contravention of the provisions of the Pure Foods Act, 1908. The defendant was described as trading as The Fallière's Flesh Food Company, of Ash Street, Sydney. The prosecution was conducted on the information of the Inspector of the Board of Health.

The defendant pleaded not guilty.

Dr. Thomas Cooksey, Government Analyst, stated in evidence that he had analysed Fallière's Flesh Food X Tablets and No. 1 Flesh Food. The former were two grain tablets, and contained sodium salicylate, sodium bicarbonate, a small amount of quinine and some saccharine matter. The latter was in the form of pills, which, when deprived of their coating, weighed six grains. Their constituents were carbonate of iron and pepsin.

Evidence was given that the defendant was also the proprietor of the Watworth Obesity Company and the Kookaburra Newspaper Company. He was also agent for the sale of Dr. Coverdale's Cosmetics.

Mr. Arthur Kench, Inspector of the Board of Health, gave evidence to the effect that he had visited the defendant at Ash Street. The defendant described the treatment as consisting of tablets, which were a tonic preparation. They built up vigor and vitality, and people got fat on them. He admitted that he was an advertiser and not a medical man, and that he did not know what a patient or a client would be suffering from. He did not interview the patients himself, but had a lady who did it. A large proportion of the business was conducted by post. The tablets were manufactured for him by Messrs. Elliott Brothers, from a formula which he obtained many years ago. He employed from 15 to 20 females, and carried on, besides the Dr. Fallière Flesh Food business, the Watworth Obesity Company, the Vessey Varix Arium Company and the Cleterbol Company. A considerable quantity of advertising matter was removed from the office.

Dr. A. A. Palmer, Government Medical Officer, stated that "flesh food for development" was an incorrect description. The contents of the tablets and pills would neither produce flesh nor induce development. He admitted that there was nothing deleterious in the preparations.

Dr. H. T. MacCulloch stated that the preparations were in no sense a food. They might be regarded as a tonic. Quinine was counteracted by the salicylate.

The defendant was found guilty, and was fined £10, with £2 8s. costs, or in default three months' imprisonment with hard labour. He was given 14 days to pay.

On the same day, Tracey Miller, trading as The Waymor Company, at 7 Rawson Place, Sydney, was proceeded against on the charge of having sold an article, *viz.*, The Waymor Flesh Forming Tablets, which was falsely described. The defendant pleaded guilty.

Dr. Thomas Cooksey stated that, deprived of their coating, the tablets weighed 4½ grains each, and consisted of phosphate of iron, lime, soda and potash, together with saccharine and starchy matter.

The defendant had stated to the Inspector that the tablets were manufactured by Elliott Brothers. He did not know what they consisted of, but stated that they were in accordance with Parrish's Food formula. He claimed that they were flesh producers, and a food. They were sold at 5s. per box. The Inspector had seen 26 tins, labelled 6,000 tablets, and three labelled 14,000. The defendant employed 12 females and a boy. Advertisements were discovered of the "Federal Collecting Agency." The defendant had said that this was a bluff business. It was run from the same office, and he admitted that it was just to get the money in. There was no such person as Mr. Herder referred to in the advertisement. The tablets had been largely advertised in the daily press. He stated that he had a number of testimonials and letters from people to whom money had been returned.

The defendant stated in evidence that he had an American formula of a flesh-forming tablet. As he could not get the drugs in Sydney he went to Messrs. Elliott Brothers, and asked them to supply him with flesh-forming tablets according to a formula supplied by their chemists. He got

the tablets from them and then advertised them. He had returned money to purchasers of the tablets when they said that the tablets had not effected a cure. He had ceased the sale of the tablets.

Dr. H. T. MacCulloch gave evidence to the effect that the preparation was not a food at all.

Defendant was fined £15 and £2 8s. costs. The fine was paid.

Herbert Henry Watson and another, trading as The Sana Veta Company, of 178 Castlereagh Street, Sydney, were also prosecuted for having sold an article named Sana Veta, which was falsely described. The defendant pleaded guilty.

Mr. Arthur Kench, Inspector of the Board of Health, stated that he had visited the defendant, and was told that a Mr. Smith was the registered proprietor. A girl named Rita Baxter had stated that she was the manageress, and that there were three employees engaged. Mr. Smith was said to be in London, and defendant was looking after the business. In the advertisements, Sana Veta was described as "the great remedy for thin and emaciated people," and was "the only scientific preparation to build up flesh." Several empty tins, labelled 10,000 tablets, were found. Eighty-four tablets cost 12s. 6d. He learned that about 20 persons bought the treatment daily. The treatment was largely advertised in the daily press.

Dr. Thomas Cooksey stated that the tablets, deprived of their coating, weighed approximately eight grains, and contained pepsin, calcium phosphate and saccharine matter.

Dr. H. C. MacCulloch gave evidence, as in the other cases.

The defendant was fined £10 and £2 8s. cost. The fine was paid.

Naval and Military.

We regret to find the names of Major C. E. Wassell, Captain D. D. Jamieson and Captain J. B. Kelly are included in the list of those ill in hospital attached to the 189th casualty list, which was issued on August 3, 1916. In the 190th list, published on August 4, 1916, the name of Captain O. N. Finn, of Western Australia, is included among the ill in hospital. The latest list of the Australian Imperial Forces does not include any officer of this name, but does include the name of Captain C. N. Finn.

The 191st and 192nd and 193rd list of casualties have been issued on August 9, 13, and 14 respectively. Only two medical men are named in these lists. Captain E. Russell is reported to be severely wounded and seriously ill. The name of Lieutenant-Colonel H. K. Bean is included in the list of those ill in hospital.

The following has appeared in the *Commonwealth of Australia Gazette*, No. 96, under date of August 3, 1916:—

Army Medical Corps.

To be Captains—

Captain S. H. Weedon, Australian Army Medical Corps. Dated 8th July, 1916.

Captain (provisionally) L. May, Australian Army Medical Corps. Dated 20th July, 1916.

Captain (provisionally) S. G. Gibson, Australian Army Medical Corps. Dated 13th June, 1916.

Honorary Captain J. R. Muirhead, Australian Army Medical Corps Reserve. Dated 25th November, 1914. (This cancels the notificaation respecting the date of appointment of this officer which appeared on page 224 of *Commonwealth of Australia Gazette*, No. 10, of 6th February, 1915.)

Honorary Captain L. B. Daly, Australian Army Medical Corps Reserve. Dated 22nd May, 1916.

Honorary Captain J. K. C. Laing, Australian Army Medical Corps Reserve. Dated 15th November, 1915. (This cancels the notification respecting the date of appointment of this officer which appeared on page 700 of *Commonwealth of Australia Gazette*, No. 40, of 30th March, 1916.)

Honorary Captain J. S. Reed, Australian Army Medical Corps Reserve. Dated 26th February, 1916.

Roy Douglas Bartram. Dated 22nd November, 1915.

Cedric Murray Samson. Dated 1st December, 1915. (This cancels the notification respecting the date of appointment of this officer which appeared on page 700 of *Commonwealth of Australia Gazette*, No. 40, of 30th March, 1916.)

Douglas Lewis Barlow. Dated 20th May, 1916.

John Leslie Ross-Soden, Bernard Moore Sampson, George Stephenson Elliott, and Charles Herbert Leedman. Dated 15th June, 1916.

Reginald Howden. Dated 20th June, 1916.

James Warne. Dated 27th June, 1916.

Edward Field. Dated 30th June, 1916.

James Ignatius Rowan. Dated 5th July, 1916.

James Stewart. Dated 6th July, 1916.

Harold Skarratt Thomas and John Robert Barriskill. Dated 7th July, 1916.

Joseph Eustace Shelley. Dated 8th July, 1916.

Charles Cecil Humphries. Dated 13th July, 1916.

David Tyrrell Keyes. Dated 19th July, 1916.

Appointments Terminated.

The appointments of the undermentioned officers are terminated from dates as stated against their respective names:—

Colonel T. H. Fiaschi, D.S.O., V.D. 10th July, 1916.

Lieutenant-Colonel S. Jamieson. 30th June, 1916. (This cancels the notification respecting the termination of appointment of this officer which appeared on page 1306 of *Commonwealth of Australia Gazette*, No. 68, of 8th June, 1916.)

Major W. Trethowan. 29th July, 1916.

Captain A. R. Haynes. 6th February, 1916. (This cancels the notification respecting the termination of appointment of this officer which appeared on page 1581 of *Commonwealth of Australia Gazette*, No. 83, of 13th July, 1916.)

Captain W. G. Brown. 26th July, 1916.

Captain P. C. Higgins. 2nd July, 1916.

Captain T. J. Lonergan. 15th June, 1916.

Captain W. A. Harrison. 3rd July, 1916.

The following has appeared in the *Commonwealth of Australia Gazette*, No. 100, under date of August 10, 1916:—

Australian Imperial Force.

Army Medical Corps.

To be Lieutenant-Colonel—

Honorary Captain C. B. Blackburn, Australian Army Medical Corps Reserve.

To be Majors—

Captain G. A. C. Douglas, Australian Army Medical Corps.

Captain (provisional) L. J. C. Mitchell, Australian Army Medical Corps.

Honorary Major L. S. Latham, Australian Army Medical Corps Reserve.

Honorary Major A. J. H. Saw, Australian Army Medical Corps Reserve.

Honorary Major H. Priestley, Australian Army Medical Corps Reserve.

Honorary Captain C. Clarke, Australian Army Medical Corps Reserve.

To be Captains—

Captain (provisional) M. D. Silberberg, Australian Army Medical Corps.

Honorary Major A. W. Marwood, Australian Army Medical Corps Reserve.

Honorary Captain H. A. S. Newton, Australian Army Medical Corps Reserve.

Honorary Captain J. E. McGlashan, Australian Army Medical Corps Reserve.

Honorary Captain E. E. Brown, Australian Army Medical Corps Reserve.

Honorary Captain J. M. Hair, Australian Army Medical Corps Reserve.

Hubert Sheppard Bush.

Henry Francis Herbert Elvins.

Australian Military Forces.

Appointments, etc.

1st Military District.

Australian Army Medical Corps—

The provisional appointment of Captain N. W. Markwell is confirmed.

The provisional appointment of Captain D. Horn is withdrawn.

Australian Army Medical Corps Reserve—

Henry Priestley to be Honorary Major. Dated 1st August, 1916.

Eric MacLeod Smith to be Honorary Captain. Dated 1st August, 1916.

2nd Military District.

Australian Army Medical Corps—

Francis William Kane to be Captain (temporarily). Dated 18th November, 1915.

Major W. M. Helsham to be Lieutenant-Colonel. Dated 1st August, 1916.

Australian Army Medical Corps Reserve—

David Arthur Welsh to be Honorary Major. Dated 1st August, 1915. (This cancels the notification respecting the date of appointment of this officer which appeared on page 1038 of *Commonwealth of Australia Gazette*, No. 54, of 4th May, 1916.)

John William Farrar to be Honorary Captain. Dated 9th March, 1915.

Thomas Bennett Walley to be Honorary Captain. Dated 28th November, 1915.

Kenneth Alfred Golledge to be Honorary Captain. Dated 15th June, 1916.

John Joseph Brennan to be Honorary Captain. Dated 17th June, 1916.

John Malcolm, Philip Thornton Thane and Harold Seaward Marsh to be Honorary Captains. Dated 22nd June, 1916.

Hilton Charles Garnett Smith to be Honorary Captain. Dated 28th June, 1916.

William Alexander Dunn to be Honorary Captain. Dated 1st July, 1916.

3rd Military District.

Australian Army Medical Corps Reserve—

Keith Gemmell Colquhoun to be Honorary Captain. Dated 16th March, 1915.

Henry Cecil Colville to be Honorary Captain. Dated 17th March, 1915.

Cyril Checchi to be Honorary Captain. Dated 14th April, 1915.

Alexander Hopkins Thwaites to be Honorary Captain. Dated 14th July, 1915.

Charles Joseph Oliver to be Honorary Captain. Dated 28th September, 1915.

Albert Ernest Ffrost to be Honorary Captain. Dated 1st August, 1916.

4th Military District.

Australian Army Medical Corps Reserve—

Patrick Cockburn to be Honorary Captain. Dated 1st August, 1916.

Honorary Captain E. A. Johnson is transferred from Unattached List, and to be Honorary Major. Dated 1st July, 1916.

5th Military District.

Australian Army Medical Corps Reserve—

Albert Joseph McShane to be Honorary Captain. Dated 9th September, 1915. (This cancels the notification respecting this officer which appeared on page 2453 of *Commonwealth of Australia Gazette*, No. 116, of 25th September, 1915.)

David Duncan Paton to be Honorary Captain. Dated 1st August, 1916.

6th Military District.

Australian Army Medical Corps—

The provisional appointments of Captains W. L. Crowther and E. Brettingham-Moore are confirmed.

Australian Naval and Military Expeditionary Force.

Appointment.

His Excellency the Governor-General, acting with the advice of the Federal Executive Council, has been pleased to approve of the following appointment being made in Australian Naval and Military Expeditionary Force, to take effect from 21st August, 1916:—

Army Medical Corps.

To be Captain—

Honorary Captain J. G. Skeet, Australian Army Medical Corps Reserve.

Correspondence.

ASTHMA: ITS CAUSE AND TREATMENT.

Sir,—Dr. Ewbank gives away his whole position as an authority on asthma when he states that no asthmatic has a normal nose, and that there is little, if any, relationship between blood pressure and asthma. St. Clair Thomson, one of Francis' most pronounced opponents, at the outset writes: "When the nasal cavities are normal, a trial may be given to the method recommended by Francis." The use of adrenalin is certainly magical in many cases, especially when the blood pressure is below 100, as it often is in "polypi patients"; but its continued use must surely be harmful. Under the heading of chronic hypertrophic rhinitis, Dr. Ewbank refers to the repeated cutting away of a mucosa of the inferior turbinate until "all excitable areas that are liable to touch the septum have been removed." So I may be pardoned for supposing that he does "snip" the mucosa anteriorly.

His exact description of the number, size and colour of asthma spots is rather luminous when compared with his statement that they are very difficult to detect. "Hyperæsthetic nerve endings" is rather like that blessed word "hysteria" as a cloak for our ignorance of the *fons et origo*. Asthma arises from a multitude of conditions, many of which we can recognize and remove. As nasal surgery becomes more and more efficient, so does the number of our successes increase. The two main causes of failure in the treatment of asthma due to abnormalities of the nose are inefficient removal of high septal deviations or of mucous polypi, and for my remissions in these in the past may be the great Architect of the Universe will have mercy on my soul.

I simply do not believe Dr. Ewbank when he writes that he is conversant with Francis' method; his whole attitude shows complete ignorance of how or when to apply it. Dr. Gile, whom he quotes, is evidently as innocent of the proper use of the cautery as Dr. Ewbank, for, if used as Francis advocates, it is impossible to produce meningitis or any other "itis," and it relatively is seldom applied to the middle turbinate.

Dr. Ewbank refers to the want of support accorded to Francis in Australia. Can be quote any support for the treatment he advocates?

Yours, etc.,

W. KENT HUGHES.

22 Collins Street, Melbourne,
August 12, 1916.

HYPERÆSTHESIA SEXUALIS.

Sir,—I should be extremely grateful for your help and advice in the treatment of a case now under my care, and of apparent difficulty. The patient is a single man of 30, who complains of excessive and too easily aroused sexual excitability (which, however, he does not seem to attempt to control very much), and of premature ejaculation during the act. He has never suffered from any venereal disease, and in all other respects is apparently perfectly healthy, though his urine is often loaded with phosphates, and he has some involuntary ejaculation of (?) prostatic fluid. His sexual indulgence often takes the form of some variety of masturbation, and has done so for many years.

If by your aid and that of any readers of your journal who may offer suggestions I can help the man, I should be glad. I should be particularly grateful for any references to the advisability or otherwise of his marrying, as he wishes, and to the probability of conjugal happiness for him and his wife if he does so.

Yours, etc.,

"INVICTA."

[According to Krafft-Ebing excessive *libido* may be of peripheral or of central origin. In the former case, pruritus and eczema are the most frequent causes, and if they can be removed the hyperæthesia sexualis may disappear. Even when the condition is based on a psycho-sexual abnormality, it may be successfully treated in many cases, provided that the patient is prepared to submit himself to treatment. Careful dietary, active occupations, especially those requiring mental concentration, and hypnotic suggestion are the

most useful therapeutic means. Marriage has proved a failure in well-developed cases, but in a mild case, such as that described by "Invicta," conjugal happiness is not unlikely.]

Proceedings of the Australasian Medical Boards.

VICTORIA.

The following have been registered under the provisions of the "Medical Act, 1915," as duly qualified medical practitioners:—

Siegmund Rabl, M.B. et Ch.B., Melb., 1916.
Norman Reginald Mathews, M.B. et Ch.B., Melb., 1916.
Frank Elliot Trenoweth True, M.B. et Ch.M., Sydney, 1916.

Books Received.

A TEXT-BOOK OF PHYSICS AND CHEMISTRY FOR NURSES, by A. R. Bliss, Jun., Ph.G., Ph.Ch., A.M., Phm.D., M.D., and A. H. Olive, A.B., A.M., Ph.Ch., Phm.D.; 1916. Philadelphia and London: J. B. Lippincott Company; Sydney: Angus & Robertson; Demi 8vo., with illustrations; pp. 250. Price, 6s. net.

AIDS TO OBSTETRICS, by Samuel Nall, B.A., M.B., M.R.C.P.; revised by C. J. Nepean Longridge, M.D., F.R.C.S., M.R.C.P.; Eighth Edition, 1916. London: Baillière, Tindall & Cox; Fscp. 8vo., pp. 216. Price, 2s. 6d.

AIDS TO BACTERIOLOGY, by C. G. Moor, M.A., F.I.C., and William Partridge, F.I.C.; Third Edition, 1916. London: Baillière, Tindall & Cox; Fscp. 8vo., pp. 278. Price, 3s. 6d.

THE DIAGNOSIS OF NERVOUS DISEASES, by Purves Stewart, C.B., M.D., F.R.C.P.; Fourth Edition, Revised and Enlarged, 1916. London: Edward Arnold; Demi 8vo., pp. 589. Price, 15s.

TREATISE ON FRACTURES, by John B. Roberts, A.M., M.D., F.A.C.S., and James A. Kelly, A.M., M.D., 1916. Philadelphia and London: J. B. Lippincott Company; Sydney: Angus & Robertson; Royal 8vo., pp. 677. Price, 30s.

Medical Appointments.

Dr. S. B. Helwig has been appointed Officer of Health for the southern portion of the Colac Shire, Victoria, in place of Dr. J. B. Backhouse (resigned).

Dr. Thomas Thomson has been appointed Government Medical Officer at Ardlethan, New South Wales.

Dr. A. E. J. Scott has been appointed on probation for six months to the Permanent Staff of the Lunacy Department, New South Wales.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xix.

Hospital for the Insane, Goodna, Queensland, a Second Assistant Medical Superintendent.

Thursday Island Hospital, Medical Officer.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Brisbane United F.S. Institute.
WESTERN AUSTRALIA. (Hon. Sec., 230 St. George's Terrace, Perth.)	Swan District Medical Officer. All Contract Practice Appointments in Western Australia.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.)	The F.S. Medical Assoc., Incorp., Adelaide.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Department of Public Instruction—New Appointments as Medical Officer, Ophthalmic Surgeon, Ear, Nose and Throat Surgeon, Physician. Australian Natives' Association. Balmain United F.S. Dispensary. Canterbury United F.S. Dispensary. Leichhardt and Petersham Dispensary. M.U. Oddfellows' Med. Inst., Elizabeth Street, Sydney. Marrickville United F.S. Dispensary. N.S.W. Ambulance Association and Transport Brigade. North Sydney United F.S. People's Prudential Benefit Society. Phœnix Mutual Provident Society. F.S. Lodges at Casino. F.S. Lodges at Lithgow. F.S. Lodges at Orange. F.S. Lodges at Parramatta, Penrith, Auburn, and Lidcombe. Newcastle Collieries — Killingworth, Seaham Nos. 1 and 2, West Wallsend.
VICTORIA. (Hon. Sec., Medical Society Hall, East Melbourne.)	Brunswick Medical Institute. Bendigo Medical Institute. Prahran United F.S. Dispensary. Australian Prudential Association Proprietary, Limited. National Provident Association. Life Insurance Company of Australia, Limited. Mutual National Provident Club.
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.)	F.S. Lodges, Wellington, N.Z.

Diary for the Month.

Aug. 25.—N.S.W., Branch, B.M.A., Branch.
Aug. 29.—N.S.W., Branch, B.M.A., Medical Politics Committee, Organization and Science Committee.
Aug. 30.—Vic. Branch, B.M.A., Council.
Aug. 31.—S. Aust. Branch, B.M.A., Branch.
Sept. 1.—Q. Branch, B.M.A., Branch.
Sept. 6.—Cent. South. Med. Assoc. (N.S.W.).
Sept. 6.—Vic. Branch, B.M.A., Branch.
Sept. 8.—N.S.W. Branch, B.M.A., Clinical Evening.
Sept. 8.—S. Aust. Branch, B.M.A., Council.
Sept. 12.—Tas. Branch, B.M.A., Branch and Council.
Sept. 12.—N.S.W. Branch, B.M.A., Ethics Committee.
Sept. 13.—South Sydney Med. Assoc. (N.S.W.).
Sept. 14.—Vic. Branch, B.M.A., Council.
Sept. 15.—N.S.W. Branch, B.M.A., Last Day for Nomination of Two Candidates for Election of Federal Committee.
Sept. 19.—N.S.W. Branch, B.M.A., Executive and Finance Committee.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this Journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.

All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney, New South Wales.